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JUN 27 1911

Gleanings in Bee Culture

VOL. XXXIX

JUNE 15, 1911

NO. 12

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Phone Cortlandt 543.

603 Evening Post Bldg.,

20 Vesey Street.

Gleanings in Bee Culture

Published by The A. I. Root Company, Medina, Ohio

H. H. ROOT, Assistant Editor

E. R. ROOT, Editor

A. L. BOYDEN, Advertising Manager

A. I. ROOT, Editor Home Department

J. T. CALVERT, Business Manager

Entered at the Postoffice, Medina, Ohio, as Second-class Matter

VOL. XXXIX

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Editorial

OUR CALIFORNIA DEPARTMENTS.

OUR readers will notice that "Bee-keeping in California" is conducted this issue by P. C. Chadwick, of Redlands. California has so many different climates, and extends over such a large area, that it is our intention at this time to have three or four different contributors supply interesting news for this page, and to have such news appear every issue instead of every other issue. Mrs. Acklin will continue her notes, and we shall probably secure the services of one or two more bee-keepers representing the extreme south, and also a point further north.

WINTER LOSS NOT SO BAD IN EXTREME SOUTHERN CALIFORNIA.

THE following from E. M. Gibson, Jamul, Cal. (near San Diego), indicates fair wintering. The weather conditions, however, are unfavorable.

I am sure it's simply guesswork yet to foretell any thing about it; but conditions with me are not nearly so bad as reported by Mr. P. C. Chadwick for the northern part of the State, and, in fact, I lost no more bees than usual, three colonies in the lower yard, eight in the next, and fifteen in the upper or mountain yard. The loss in this mountain yard is always greatest on account of its being so much colder. Until May the prospects were first class for a big crop; but the May dwindling has been very heavy, and the cold winds continue. We had frost night before last (very light), May 25. If this condition continues, the crop will be light; but with milder weather within the next week I expect to harvest a good crop.

FARMERS' BULLETIN NO. 447, ENTITLED "BEES."

WE have just received Farmers' Bulletin, No. 447, which is virtually a text-book on bees, by Dr. E. F. Phillips, in Charge of Apiculture, Bureau of Entomology. This new edition is a slightly altered edition of Farmers' Bulletin 307, with the addition of a little matter in the text, and a few omissions. On pages 45-48 there is a complete list of the Bureau's bulletins on bee-keeping. This, like its predecessor, is a brief work on apiculture. It is conservatively and carefully written; and considering the fact that it is sent out free it ought to have a large demand. To obtain the same, address the Secretary of Agriculture, Washington, D. C., asking for Farmers' Bulletin No. 447, entitled "Bees," by Dr. E. F. Phillips.

THE MASSACHUSETTS SCHOOL OF APICULTURE AT THE AMHERST AGRICULTURAL COLLEGE.

MASSACHUSETTS is surely outstripping all her sister States in the recognition that she gives to apiculture in the Agricultural College at Amherst. Dr. Burton N. Gates, formerly of the Bureau of Entomology, Washington, D. C., has been appointed instructor of apiculture, and certainly no better man for the place could have been secured. He seems to have the enthusiastic backing of the Secretary of Agriculture and the authorities of the college. A model apiary under his supervision has been started where practical demonstrations are made for the benefit of students in bee culture. While the apiary is not large, a nice beginning has been made. It is the intention, as fast as the funds will permit, to put up a model apiary workshop and extracting-building, and materially increase the apiary and equipment. Splendid progress has been made for the first year, and a class of some thirty students in bee culture has just graduated.

We had the pleasure last week of attending a general convention and a field-day meet while at the college. Among the speakers secured by Dr. Gates from outside of the State were Anna Botsford Comstock, Entomologist at Cornell University; Arthur C. Miller, of Providence, R. I., one of the best-informed bee-keepers in the country; and E. R. Root, of Medina. Owing to the unfavorable weather the field-day meet was not as largely attended as it would otherwise have been. But there was a very enthusiastic gathering, and apparently those who came seemed well repaid for their visit.

One of the most interesting addresses given to us was by Prof. W. P. Brooks, of the college, on the subject of growing clovers. In our humble opinion he knows more about the clovers and suitable soil for growing them than almost any other man in the United States. We hope to give you the benefit of some of his experience in a later issue.

The paper by Mrs. Comstock, on the domestic economy of the hive, is one of the most interesting we ever heard. We hope to place it before our readers at another time.

Arthur C. Miller exhibited an observatory hive that surpasses any thing of the kind we have ever seen. With this Mr. Miller has made some interesting if not wonderful discoveries. There is no doubt that he knows more about the babyhood of bees than any other man in the world. His studies are a revelation, and we are arranging to get them before the public.

THE HONEY-CROP CONDITIONS FOR 1911.

REPORTS are so conflicting that it is impossible to give even a good guess as to the yield from clover. Taken as a whole the prospects are not as good as they were two weeks ago. Since that time there has been quite a severe dry spell in some sections. While conditions early in the spring were exceptionally good, and promising a fine yield from clover, the aforesaid drouth apparently gave the plant a setback; but, very fortunately, this was broken by a general rain throughout most of the Eastern States, commencing about the 3d and 4th, and closing about the 10th of June. This did an immense amount of good. How much it will retrieve from the drouth it is impossible to forecast.

In New Jersey, Eastern Pennsylvania, and perhaps Delaware, the drouth was more severe than in that section on the coast directly north; but clover never is very abundant in Eastern Massachusetts and Connecticut, largely because of a lack of lime in the soil. So we never expect very much honey from those two sections. In Vermont, New Hampshire, and Maine, the clover flow at this writing apparently will be good. Conditions also are very promising for a good crop in Canada; and the very opportune rains in New Jersey and Eastern Pennsylvania have improved the clover conditions very materially. If these rains had come on a week or ten days sooner, the conditions would have been ideal. As it is, there will probably be only from one-fourth to one-half a crop of clover in New Jersey, Pennsylvania, and possibly some parts of New York. Central New York will average rather better than the Eastern part of the State.

Reports from Michigan are very conflicting, for that State seems to have all kinds of soil and all kinds of climate. Some reports are very flattering, while others are discouraging.

Reports are just as conflicting in Ohio, Indiana, and Illinois. The drouth in these States was not as severe as in the extreme East.

As yet we have seen no reliable reports from the alfalfa States; but a few scattering replies seem to indicate that the alfalfa crop will be about as usual.

We have already reported that the crop in Florida and California is short, but a late report shows prospects of a good yield from mangrove are exceptionally good on the east coast of Florida.

In California it appears that, owing to the unfavorable season last year, many colonies had to go into winter quarters in a very much weakened condition—too weak to survive till the following spring. It is reported that thousands of colonies died outright, either in late winter or early spring. Notwithstanding all of this, several carloads of California honey have been bought; and we may say in this connection that a considerable quantity of Florida honey has been shipped north; but it may be safely assumed that the aggregate yield from either State will be light. Texas seems to have had a good season; but as her crop rarely moves out of her own borders, it will have no perceptible effect on the general market.

Taking it all in all, present indications generally do not warrant the belief that the crop of clover will be large, but, apparently, it will be considerably in excess of that of last year. The short crop of California and Florida honey, and the possible light yield of clover would seem to warrant a general stiffening of prices all up and down the line; and, even if there should be a good yield of clover, in this day and age it would be simply impossible to glut the market with it. We should not be surprised if the buyers of clover or Eastern honey will be bidding hard against each other; and unless conditions improve materially, we would naturally expect the market to advance. Even if the yield from alfalfa should be large, this kind of honey is coming to be more and more largely consumed right where it is produced. We can not, therefore, think it can have a tendency to weaken prices, no matter what the yield may be.

In order to get more reliable information we shall be glad to have our subscribers everywhere send us postal-card reports on existing conditions. Do not send us long reports, because we can not take time to read them.

MOVING BEES A SHORT DISTANCE.

ONE of the questions that are being asked constantly is how to move bees a short distance. The time was when it was considered impracticable to do this except after a confinement for a period during winter. We have learned by experience that it is no trick at all if one proceeds properly. If he contemplates moving the bees he should undertake the work before a honey-flow. Proceed as follows: In the cool of the morning, or as early as possible, approach the hive that is to be moved to the front or back yard. Smoke it vigorously, then pound and drum on the hive, giving it a general shake-up. Throw it on a wheelbarrow, bumping it as much as possible when going to the new place. Set it down with a thump and a jar. Smoke again; then lean a board up against the entrance, so the bees will be sure to mark the new location when they come out. The board should be removed the next day. Change the appearance of the old spot as much as possible where the hives

stood. If there is any trash or rubbish, strew it promiscuously around on the old location for a few days. Try out the plan and report.

As already stated, we do not advise moving during a honey-flow nor immediately following. The reason for this is obvious.

Last fall we had some hives that were located within six feet of some plowed ground. We moved them in the manner described, clear over to the other side of the yard. There was scarcely a bee that returned, and this spring we had no better colonies in the apiary. Again, this spring we had one yard that was located in a spot where the north wind struck it a little fiercely. We decided to move some of the hives to the center of a large orchard about 200 yards away, and that, too, on the other side of the road. We have been putting a number of colonies into new locations, and the bees seem to stay without any difficulty. We expect to try a few more colonies after the honey-flow, to see what the effect will be.

FACT AND FICTION.

THE following appears in a health-journal entitled *The Battle Creek Idea*, published at Battle Creek, Mich.:

Q. Is bees' honey a healthful food?

A. It is a splendid food for bees. It is not the best food for human beings. It is not the best form of sweet. It is better than cane sugar, however, because it contains all the properties of the sweet juices of plants, whereas cane sugar does not. Cane sugar is a crystalline sugar, and there is no lime present. It also requires digestion, and is an irritant to the stomach. The sugar of flowers is fruit sugar, and the bees gather this fruit sugar and deposit it in little cells. If they did not do any thing more it would be the most perfect of sugar; but, unfortunately, bees, like flies, are not altogether tidy. They do not use the doormat before they come into the house; and they gather up more or less dirt on their feet, and get dust on their fuzzy bodies, and, of course, some of this gets into the honey; also some of the pollen and some of the essential oils of the plants; and if the plants happen to be poisonous, then some of these poisonous flavors are put into the honey. Then there is another thing. The bee has a poison-bag as well as a honey-bag. I remember that very well from an experience I had when a boy. I was exploring a bee and I discovered the poison-bag and thought it was the honey-bag; and that little drop of nectar which I touched to my tongue made me so sick I did not get over it for a good many years, and was not able to take honey without being made sick by it. This is formic acid, which is a very irritating and poisonous substance, and is a powerful disinfectant. *The chief use of the poison-bag is to secrete formic acid to preserve the honey. The bee adulterates the honey with antiseptics. The United States government prohibits the use of antiseptics without putting a label on the package; but the bee violates the pure-food law.* When he gets the little cell filled with honey he puts a minute speck of formic acid out of his poison-bag down into that cell so the honey will not ferment. Some people are very susceptible to this formic acid, and the small amount of it that the honey contains is enough to make them ill, and to cause a breaking-out of nettle rash—the same rash that one gets when stung by the nettle, and that is formic acid also.

It is hard to conceive how more fact and fiction could be put together in one conglomerate mass than in this. It is strange how any one can draw on his imagination. Just think of it! a little drop of nectar or bee-poison made the writer of the above so sick that he could not get over it for many

years. Then he rehearses the old exploded theory that bees sting honey; goes on to say that the chief use of the poison-sac is to secrete formic acid to preserve the honey; that the bee adulterates with antiseptics, contrary to law (?), etc. We should like to know where the writer gets his scientific authority for the statement that the bees put bee-sting poison in honey so it will not ferment. Then it is news that honey causes a rash to break out all over the consumer on account of the alleged presence of bee poison in honey. This quotation is a violent case of where "a little learning is dangerous."

IN MEMORIAM OF W. Z. HUTCHINSON.

THE sad news of the death of no less a personage than W. Z. Hutchinson, founder and editor of the *Bee-keepers' Review*, Flint, Mich., reached us just as the last issue was going to our readers. For some months back I had been forced to the conviction that our old friend had not many more months to live; but I was hardly prepared to believe that his demise would come so soon. He passed away at his home at 2 o'clock on the afternoon of May 30, at the age of 60.

I do not hesitate to say that Mr. Hutchinson was one of the ablest writers on bees that this country ever had. Indeed, I doubt if there is a man in all our ranks who was a better bee-keeper or a more forcible writer. Our senior editor, Mr. A. I. Root, "discovered" him away back in 1878; and so pleased was he with his work that he made him our leading correspondent. For many years he conducted in this journal a department entitled "Notes from the Banner Apiary." This was discontinued in 1887, when the *Review* was started. The launching of the new bee journal was at a time when the field was already full of bee-journals and competition of the severest kind. But the *Review* grew in popularity and strength until today it is recognized as one of the foremost publications on bees in all the world.

Mr. Hutchinson wrote numerous newspaper and magazine articles on bees, and he was also the author of that superb work, "Advanced Bee Culture," the new edition of which, containing his very latest and best thoughts, is just out.

The death of Mr. Hutchinson will be a distinct loss to the bee-keeping world, and those of us who were fortunate enough to know him best loved him as a brother. While I was not unprepared for the news, yet it came as a severe shock. I can not bring myself to believe yet that this quiet, modest man, who rarely spoke at conventions, but whose words will long live after him through the printed page, has gone. I could never think of him as a competitor, and when his paper grew I was sincerely glad.

In our next issue we shall have an extended sketch of his life. See page 23, advertising section.—E. R. ROOT.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

I VOTE for a 24-section shipping-case, double-tier, with three-inch glass.

HIP! HIP! HURRAH! Illinois has a foul-brood law. [Then the insurgent bee-keepers who have been fighting this law were not successful. Good!—ED.]

THE OPEN WINTER caused some anxiety about white clover, but I never knew it thicker than it is now. Of course, it is yet to be seen whether it will yield any nectar.

THAT FINE TYPE is all right. If any old fellow can't read it so well, let him get fresh specs. Fine type gets in more stuff, and you can't get in too much stuff for us younger chaps who want to learn all we can about bees.

FRUIT-BLOOM is no longer of so great importance here, because it comes right in the midst of dandelions which have now become so plentiful. Still, it is of value because yielding in the afternoon after dandelions have closed up.

HONEY-BUTTER, p. 293, is said to be granulated honey in bricks. The term has already been used to mean butter with an ounce or more of honey to the pound worked into it. Makes the honey taste better and keep better. Try it.

IS NOT THIS the way of it? A section filled and sealed out to the wood is less likely to break in shipping than one with a row of empty cells; but if it does break it is more mussy. Also the full one is mussier when cut out to put on the table.

IT SEEMS that Standard Oil with all its millions has to yield to the majesty of the law at last. Now if Lorimer is properly taken care of, the death-grip of the saloon loosened from the throat of the nation, and the honey-market bettered a little, this will be a nice country to live in.

F. M. BALDWIN, I think cucumbers yield a good quantity of honey; but other plants yield at the same time, so I can say nothing positively about its quality. I don't believe it's better than the average fall honey, and sections are varnished with something that I'm afraid comes from cucumber.

A CORRESPONDENT is puzzled over a Straw on p. 237, and I don't wonder. To prevent after-swarms, it says put the swarm "on an old stand," which would mean any old stand. That "an" should be "the." Put the swarm on the old stand, and put the old colony close beside it. Then in 7 or 8 days move the old colony to a new stand.

TROUBLE in Medina with a rim of honey at the top in Langstroth frames, page 322. Ever try foundation splints so as to prevent stretching of the upper cells? [No. But do you really think that that would remedy the trouble? We used to have honey in the upper row of cells when we used medium and heavy brood foundation, that is, wax so heavy that there would be no stretching of

those cells. No queen or bees either ever put brood clear up to the top-bar like the Cyprian and Holy Land queens we formerly had.—ED.]

THE REASONS given for having hives in pairs, p. 319, are valid, but my chief reason is that double the number can be kept on the same area. Place hives singly in a row at a safe distance, thus:

0 0 0 0 0 0

Now set another hive beside each of these, thus:

00 00 00 00 00 00

and there will be no more danger of bees entering wrong hives in the second row than in the first. A bee from the first hive of a pair will be more likely to enter the first hive of the next pair than to enter the second hive of its own pair. [You are right.—ED.]

A CORRESPONDENT says a drone is dwarfed by being reared in a worker-cell, and thinks an opposite cause should produce an opposite effect, and so would expect an enlarged worker-cell to produce an enlarged worker. That reasoning will hardly hold. In China small shoes make small feet. It does not follow that large shoes make large feet. When a boy I went barefoot each summer. My feet had all outdoors to grow in, but they are not abnormal in size. Yet the fact remains that prominent French beekeepers say that bees *have been* enlarged by the use of cells larger than common. [We can not help sharing your feeling of doubt that bees are made any larger by giving them larger cells.—ED.]

ITALIANS are claimed to be necessary to clean up European foul brood. I suspect that hybrids are just as good as Italians *if just as vigorous*. Aug. 18, 1910, I caged the queen in No. 105, which had European foul brood, and freed her six days later. No disease has been found in No. 105 since, the last time it was inspected being May 19, 1911. No. 105 is a colony of hybrids, most of the bees not having even one yellow stripe. [From the general reports we have received, hybrids are by no means as good as pure Italian stock for cleaning out European foul brood. But it is conceivable that extra vigorous stock such as you have, a cross between blacks and Italians, might clean up the disease quite as well; and it is conceivable, also, that some pure Italians will be no better than most blacks.—ED.]

IN A SYMPOSIUM of replies in *Schweiz. Bztg.*, 138, regarding the width of frame stuff, one man prefers .984 inch, and the rest want nothing less than 1.102 inches. That's close up to the Miller frame with its 1.125 inches. [That is very close to the average of the frame stuff put out by the hive-manufacturers of this country. It is pleasant to know that the general consensus

of opinion on both sides of the great water is about the same.—ED.]

MOST of the logic, p. 262, about eight and ten frame hives is all right, Mr. Editor, but one thing is not. That two-thirds of hives now sold are ten-frame does not prove they are best, but it proves that you have told beginners they are best. Hives are sold chiefly to those who are more or less beginners, and beginners take your word for what is best. Mind you, I don't say your advice is wrong in this case. I changed from ten to eight frames mainly to be in fashion. If it were to do over again I would likely stay by the ten frames.

THE STATEMENT, page 290, that breakage and leakage in shipping comb honey averages 20 per cent is rather startling. I had supposed one per cent was pretty bad. [Doubtless one per cent would be a high average of breakage for you, shipping as you do in carloads, and looking after the packing yourself. The 20 per cent is based on the average of shipments of comb honey from everybody alike. But even when the comb honey is well put up you would be surprised to see the amount of breakage that takes place in less than carload shipments.—ED.]

"THE QUEEN in a natural state lives about five years." That's the provokingly brief statement of the *British Bee Journal*, p. 130. I wish it would enlarge a little upon it, and tell us what is the natural state, and how long she lives in the average hive under average conditions. [Five years is a long time in our locality for a queen-bee to live. We seldom have a queen live more than four years; and the average in our yards probably would not run much over three years. These figures are based on the assumption that the queens are mothers of full colonies, and lay eggs for a big force of bees.—ED.]

THOSE FIGURES, p. 326, set me to figuring. If a queen lays 3000 eggs daily from May 25 to June 10, she will in that 16 days fill 8 frames full all but a rim of $\frac{1}{2}$ inch at top and at each side. If she lays daily 4000 eggs she will in 16 days fill $9\frac{1}{2}$ frames entirely full. But notice, that's only for 16 days, and a hive must hold what a queen will lay for 21 days. Besides, frames are never filled without a considerable margin, for at least some of the combs. If we allow an average margin of one inch at top and sides, it will take 14 frames to accommodate a queen that averages 3500 daily for 21 days. No doubt many a good queen is badly cramped in a ten-frame hive during the height of the breeding season.

THE SEASON is rather unusual. Weather seemed backward for some time, but the second week in May brought a number of days with the mercury up near 90. Bees stayed in the cellar till April 13, and there was just a little question whether they could build up for the harvest. But they built up straight along, and by May 10 we had to hustle to get in the bottom-racks, for comb

was being built down below the bottom-bars. I think the colonies are stronger throughout the whole apiary than I ever knew them before at the same date, May 18. A number of second stories have been needed to accommodate the increasing brood. Just now they might be better off if they were all in ten-frame hives. A number of swarms have been reported in this locality—something that I never knew before up to the middle of May.

THAT ITEM about old comb, p. 293, looks as if the printer had been taking liberties with it. Cells worked over into drone-cells because old, and then worthless for breeding, because filled with old pollen, rather tangles me. I can't understand how there is room to enlarge a worker-cell into a drone-cell; and if it should be enlarged why should it be filled with pollen? Bees are not in the habit of putting pollen in drone-cells. I can easily understand that old combs may have holes gnawed in them by mice, and that the bees may fill the holes with drone comb, and, of course, the comb is then objectionable. But that cells become "imperfect" merely because old, and that old worker-cells are enlarged, rather gets me. (The usual objection is that cells become smaller with age.) Having as old combs as I have had, and as many of them, it seems I should have noticed it if such things happen as stated, but I never have. I'm ready to believe whatever J. E. Crane says; and if he really wrote that just as it is printed, I wish he would tell us more about it. [No mistake in the copy. It is up to Bro. Crane.—ED.]

DANDELIONS seem on the increase every year, and just now the bees seem to have more than they can do to take care of them. This change in the dandelion crop has had a very important effect in the matter of queen-rearing. Formerly a queen reared before the white-clover harvest was so likely to be poor that no cells were allowed to mature before that time. Now dandelions allow good queens to be reared about a month earlier. A few dandelion queens reared two years ago have done excellent service. Of course, it will not do to rear queens in the break between dandelions and clover. [Dandelions are also a great help in this locality in our early queen-rearing operations. But, doctor, you speak as though the dandelion queens and those reared during the white-clover harvest would be better than those reared before. What is the matter with queens reared under the impulse of scientific feeding? The man who rears queens for us in large numbers says he gets the best and most uniform results in cell-building from colonies scientifically fed when no honey-flow is on, because he can then regulate the supply of feed. During the honey-flow the bees become excited, and will sometimes neglect the important business of queen-rearing. This is particularly so when the clover flow is very heavy.—ED.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

That is a decidedly good plan Mr. Greiner tells of on page 170, March 15, that the New York bee-keepers are having school pads made so as to advertise bees and honey. We have used blotting-pads for the same purpose.

You tell us, Dr. Miller, page 196, April 1, that M. Mertinet is the originator of a new kind of clover, and has named it "apitrefle." Pray what is the significance of the name? I suspect it would mean in plain English bee clover, but am not sure. Can you tell us more about it?

I am glad to learn that the Ontario Agricultural College, Guelph, Canada, is to open a course for the study of apiculture. It may not be generally known that the Massachusetts Agricultural College, at Amherst, is also to have a short course from May 24 until June 7, closing with a convention of beekeepers June 6 and 7.

On page 199, April 1, Wesley Foster gives some timely hints on advertising honey, which are more practical by far, it seems to me, than the expensive wholesale advertising advised by others. I see no reason why interesting paragraphs on bees and honey could not be printed in quantity by the editors of bee-journals, and furnished at a moderate price to bee-keepers in all parts of the country.

Dr. Miller inquires, page 237, April 15, if it would not work, after destroying all queen-cells, and in eight days again destroying them, to give a laying queen. Perhaps, sometimes; but I find they accept a virgin more readily; also, if it would not work, to give a virgin a week earlier. Most decidedly, no, as she would be quite sure to lead out a swarm. Better wait until the swarming fever has abated.

It is true, as Mr. Doolittle says on p. 165, March 15, that a strong colony will quickly clean out dirty and moldy combs; but I have about made up my mind that it pays better to make wax of them and give the bees frames of foundation instead. True, if combs are badly molded we can't get a very large amount of wax out of them; and I have noticed that the bees often tear down such combs, or part of them, and build new.

I will say, for the information of Mr. Byer, that the corrugated cases he saw in Toronto, and mentions on page 197, April 1, are not only like our cases, but were doubtless those we furnished to the Canadian bee-keepers, for we have had considerable trade in them from Canada, where they seem to be appreciated. Not only do these cases

ship honey safely to Manitoba, Saskatchewan, and Alberta, but we have used this case in shipping comb honey to Europe the past season, with entirely satisfactory results.

Mr. H. Harley Selwyn's experience, page 254, April 15, is of much interest in relation to the treatment of foul brood. Last year, having read of placing diseased combs in the super, and confining the queen below on foundation starters in frames, I tried the plan, only to meet with complete failure. I did it as an experiment, but it won't pay.

"May God hasten the day when good women shall do at least some of the voting," says A. I. Root, p. 117, Feb. 15. Well, my brother, I have lived to see it. This very week at a school meeting called to take action on the erection of a high-school building in our village, when the crisis had come, and the votes were nearly all in, a number of public-spirited women walked single file up one aisle of our hall to the stage and dropped their ballots, and down and off at the other side, so dignified and quietly that I could not help admiring them. No need to say that we are to have a new school building.

I think you are mistaken, Mr. Editor, p. 185, March 15, in thinking that $6\frac{3}{4}$ lbs. of granulated sugar would make about 9 lbs. of stores when sealed. Now, if you take $6\frac{3}{4}$ lbs. of sugar and add 30 per cent water you will have $8\frac{3}{4}$ lbs., which, as you say, is about 9 lbs., but it would be 30 per cent water, while honey is but about 18 per cent water. Besides, more or less of the syrup will be used in making wax for cappings, and also in the increased activity of the bees. After some experiments we have tried I am satisfied we don't get many more pounds, if any, of stores sealed in a hive than we feed pounds of sugar.

An exceedingly interesting item by Wesley Foster, page 199, April 1, calls our attention to time in the insect world. Doubtless time seems longer to all the lower forms of life than to us, as we may all remember how slowly time seemed to move when we were children, and how fast it seems to fly now that we have so many things to think about and do. That insects suffer as we do from bodily injury seems doubtful, as we have sometimes severed a leg from a queen in trying to clip her wings, without very much apparent discomfort to her. Experiments made upon grasshoppers, years ago, led me to think their sense of pain is quite obtuse; and yet that bees often suffer from our clumsy manipulation of their combs is evident from their cry when pinched.

Bee-keeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas

MOVING BEES SHORT DISTANCES.

It is sometimes necessary to move bees a short distance at a time when it would prove more or less disastrous on account of the tendency of the bees to return to the old location. We have adopted a method that has given better results than the usual way of moving them. Instead of taking the bees from the old place to a new location near by, we move them a distance of several miles. Then we take bees from an entirely different location, also far away, and place them on the site which was selected at first for the others.

While this requires more hauling, we have found it so satisfactory that we have continued to practice it on many occasions. Especially do we like this method since we earnestly believe that the shaking-up that the bees receive during such a move, in addition to the change of location, some time before the honey-flow, gives them greater energy, and consequently results are obtained in the honey crop which more than pay for the extra trouble.



WHITE CLOVER AND ORANGE-BLOSSOMS IN TEXAS.

It may be surprising to note that we have in Texas as pretty white clover as anywhere else. A photograph sent us by our friend Miss Helen Buller, of Alvin, Texas, reveals this to us most forcibly. She writes, April 15, "The bees are busy on white clover—had some orange-blossom just before." Alvin is in what is known as the Gulf Coast country of Texas, the entire slope along the Gulf of Mexico about a hundred miles wide. Orange-groves have been planted there so extensively that there are now thousands of acres in orange-trees. In time, orange honey may be important in this part of Texas. In some parts of this coast country, all kinds of tropical fruits imaginable are grown to various extents, and many new fruits and vegetables are being introduced from time to time, so that it is not long before Texas will be growing almost every thing, so large is her territory and so varied her soils, her localities, her altitudes, and her climatic and atmospheric conditions. [In the next issue we expect to have an engraving showing this clover-field.—ED.]



BEES AND HONEY AS MOUSE-BAIT.

We discovered several years ago that mice are especially fond of the dried bodies of dead bees. They devour these greedily, leaving uneaten, however, the abdomen, the wings, and the legs—the part that seems to be most relished being the thorax. It afterward occurred to us that, if this were true, we might use dead bees for bait in

traps. After a trial our theory was proven, and since then we have caught many dozens of mice with such bait.

Mice are also very fond of comb, and we have baited them with this many times. Once they spoiled for our use a dish of comb honey. Accordingly we turned it into a mouse-trap, the best that we have ever had. The trap is laid so that the mouse, springing from a cake of wax placed on the particular side where the trap is, will land squarely on it, and thus meet its fate. In this way we have caught one mouse every night for several weeks. We have often caught two in a single night by looking after the trap before retiring, in nearly every case removing a mouse at that time, and another the following morning.



ANTS AND BEES.

From the number of questions asked about keeping ants out of hives, we judge that there must be more trouble from this source in many localities than we have in any of our apiaries. Possibly most of these inquiries come from the small or farmer bee-keeper. We ourselves have never had much trouble with ants molesting bees. The large wood ants and agricultural ants of Texas do not attack them; but we have several species of small red, yellow, and black ants that are very troublesome in some apiaries. Where these are very numerous we can well understand that the trouble will be serious enough to warrant taking such steps as will relieve the trouble.

The easiest method of keeping the ants away is to raise the hives up from the ground, preferably on stout wooden pegs driven into the ground, around which a trench can be dug, and filled with crude petroleum. As this is very cheap and effective it is the best remedy that we can recommend. If petroleum can not be obtained the trenches may be filled with water, using kerosene on the top. But the water, unlike the thick crude oil, is soon absorbed, hence is not as effective. If only a few hives need to be treated, the legs of the stands can be inserted in cans into which the crude oil or even water may then be poured. If water is used, a little kerosene should be poured over it to prevent the breeding of mosquitoes in it.

To prevent any bees falling into the oil, which will kill them as well as the ants if they come in contact with it, a wide alighting-board should be hung in a slanting manner in front of the hive so that the heavily loaded bees can reach the hive in safety. Tall weeds and grass should be kept down, or the ants may be able to reach the hive by using these as bridges over the trenches or cans of oil.

BEE-KEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

The orange bloom is already nearly over, and but little extracting has been done. In localities where bees depend entirely on sage ranges there is about as much honey stored per colony as in those depending on the orange alone; and there is a prospect of the sage flow lasting from four to six weeks yet, while the orange is nearly gone. This ought to be consoling to the sage man who got nothing last year.

In spite of the fact that this spring has been an ideal one for building up weak colonies, the fact remains that the strength of colonies Mar. 15 would have been about normal for Jan. 15. It is impossible to force three frames of brood in a hive that contains only bees enough to cover one frame; but new honey came in so rapidly, beginning early in the season, that it was necessary to spread the brood repeatedly to keep the queen busy, and the bees from wasting time by covering the combs on each side of the brood-nest that contained only new honey and pollen. They would have removed this in time, but time was precious.

Seven cases shipped from Redlands the first of the season brought $7\frac{1}{2}$ cts. Sounds good, doesn't it? Three buyers this week wanted to contract for the season's output of white and water-white honey. The first offered 5 cts., F. O. B., but the last one came up to $6\frac{1}{2}$; 7 would have looked better to me.

The best-posted man I have seen for some time is a honey-buyer who told me of 14 different places where there would be a big honey crop this season, in some of which the bees were only a few weeks out of their winter quarters. I have no use for these men who try to scare us out of our honey and money.

Since my report that this locality has sustained a loss of 50 per cent, I have been accused of overestimating the loss; but after further and more careful investigation I am convinced that my report was not an error. Besides, I am getting letters from other districts that lead me to believe that this condition is general over the southern part of the State. In one apiary near Monrovia only 100 colonies were saved out of 400; and in another locality 25 were left out of 150.

Not very much can be expected of colonies that start into winter quarters with a small force of bees already old enough to die, even though such colonies are often the ones that produced the most honey the season previous. In our locality many colonies died, leaving plenty of stores of both honey and pollen, and, of course, *all* died that were not well supplied. However, probably 75 per cent of the bee-keepers who lost in this way read no bee-journals, are not experienced, and therefore not up to date. They do not know what caused these conditions, and

they never will know, but will ignorantly let the same thing happen again.

One of the most essential things that bid for success is room sufficient to keep every bee working to the limit, and everlastingly at it. Valuable time is often lost, even when there is little sealed honey in the hive; colonies with scarcely a cell sealed become as completely blocked from a field-worker's standpoint as though every cell had been sealed. I learned this bitter experience during 1909, when my hives became filled to the limit; but there was little sealing done, because the bees *would not* seal until the honey was properly ripened, and the ripening was slow in the extreme. Where there were extra combs to supply room, the yield per colony was far greater, showing conclusively that plenty of empty combs are a most valuable asset to an extracting apiary.

This honey was from the orange, principally, which yields the thinnest nectar, and, besides, was gathered when weather conditions were not favorable to the rapid evaporation in the hive. With the sage it is different, the nectar being much more easily reduced, and the weather conditions more favorable. We can often extract this when no more than half sealed, yet have a splendid honey in all respects.

Successful management depends on having every colony treated as regards its own condition. When a colony is ready to extract, the work should be attended to immediately, without waiting for the entire apiary to get ready, or even enough for a day's extracting, for valuable time will be lost by some colonies before others are ready.

One year, when the season was half over, a friend of mine who had had but little experience allowed his hives to remain full and sealed because he had read that honey should be left on the hives until well ripened. Think of it! hives full, sealed, and waiting, and a honey-flow on that would yield to any good colony not less than 5 lbs. daily! There are some who go to the other extreme, and wait for little sealing under any condition, removing mere nectar at times when buyers sometimes refuse to handle for lack of body and danger of souring in the can. Others seek to do things on a big scale. They have several yards which they run on the let-alone plan until harvest time, when they rush into the yard with a power extractor, and begin on one side and strip it clean. If the owners of such yards are late, and the hives have been full for seven or eight days, from 5 to 8 lbs. of honey lost per day for lack of room, they are none the wiser, but go on with a feeling of satisfaction that they are "boring with a big auger." Details are lost sight of; swarms are let go, and conditions are not watched closely. The day is coming when these men will finish up with a gimlet!

Conversations with Doolittle

At Borodino, New York

AFTER-SWARMS FOR INCREASE.

A correspondent writes that he wishes to work his bees for comb honey and increase. He plans to use the prime swarms for honey as well as increase, and then increase as much as possible with the after-swarms.

As a rule I do not think that it pays to keep or to build up after-swarms unless the one wishing such rapid increase desires to study the way bees conduct their affairs when left to carry out their instinct to its fullest extent, or unless he is unfamiliar with increasing rapidly by artificial increase. With the after-swarms goes all prospect for any surplus honey from the parent colony, and a greater yield can be secured from this than from the prime swarm, if rightly managed. To have each prime swarm that comes, generally results in nearly doubling the number of colonies in the apiary each year; and, unless winter losses are great, this would build up an apiary as fast as the experience of a beginner would warrant.

And there is another phase of this matter which is often overlooked by the novice desiring a very rapid increase; that is, that the surplus honey secured from the parent colony, where rightly managed, will generally sell for more than enough to buy good full colonies to take the place of the after-swarms, and thus save all the time and fussing required to build them up so that they will winter. Hundreds of bee-keepers in the past would have given ten times as much to know how to be entirely rid of all after-swarms as they would to know how to build them up to full colonies for wintering. Of all the annoyances and nuisances to the practical apiarist, after-swarms are the worst.

But as all people do not think alike, I will tell how I used to manage in the beginning of my apicultural life, when I was anxious for a rapid increase, and when our present modern plans had not yet been thought of. The first requisite toward a successful start for an after-swarm is a frame of brood in all stages, to be placed in the hive at the time of hiving. As the queen with an after-swarm is rarely if ever fertilized when the swarm issues, and seldom earlier than two or four days later, it is between four and eight days before she commences to lay, thus making nearly a month from the time of hiving before any young bees emerge from the cells in which this young queen deposited her eggs. By this time the bees belonging to the swarm are beginning to die in great numbers from old age. This keeps such a colony weak from that time on.

It helps materially to give a frame of brood; for, as fast as the bees die, young bees are emerging to take their places; and thus the queen, when she begins to lay, has many suitable bees to mature the eggs and brood, so that, by the end of six weeks from the time the after-swarm was hived, there is a populous colony in good condition in-

stead of one sadly deficient in numbers. This frame of brood is also of much value in case the after-swarm loses its queen when out to meet the drone, for she is sometimes caught by birds, or fails to mark her new home accurately. In case of a loss of this kind, the fate of a broodless colony is sealed unless the bee-keeper is on hand to remedy the matter by giving another queen or brood.

If brood is given when the swarm is hived, and the queen becomes lost, they have the material from which to rear another. Then if, in addition to the frame of brood, the remainder of the hive is filled with empty combs at time of hiving, or, better still, with combs containing some honey, this colony at the beginning of winter will be more valuable than are those from prime swarms, inasmuch as the queen will be at her best the following year, while the queens in prime swarms, where more than two years old, often begin to weaken and fail before the honey harvest of the next year. In the absence of combs, other than the one containing brood, I would most certainly use comb foundation for all after-swarms, no matter what it costs, if I intend to winter them; and I say this, knowing that such after-swarms build worker-comb almost entirely.

I said, "if I intend to winter them," for I have often used after-swarms for building such worker-combs, keeping them at it until they were used up in doing this, or so nearly so that several were united for wintering. I then believed that there was a profit in using them in this way; and where combs are scarce, and foundation high, I still believe they can be made as profitable in this way as in any other, where they are allowed to issue at all. However, if I should desire them for wintering I would give them every advantage possible, including comb foundation, where empty combs are not available. Having them fixed as I have outlined, they are now in good condition unless they should fail in securing enough stores for winter.

Where these are lacking they must be fed the same as any other colony which is short of stores when the flow of nectar ceases for the year. If they are thus short, do not delay this feeding, but do it just as soon as you reasonably believe that the honey harvest is over for the season, so that it may be gotten in shape to surround the winter nest as is needed for successful wintering.

The question of how much to feed depends upon whether the bees are to be wintered in the cellar or on the summer stands. When wintered in the cellar the amount given can be shaded by from 5 to 10 pounds. If the bees are wintered on the summer stands I allow from 25 to 30 pounds, preferably the latter. From more than forty years' experience I have found that, with that amount, the bees feel so rich that they do not retrench in brood-rearing before the flowers bloom in spring, as they will when light in stores.

General Correspondence

THE BINGHAM AND JONES KNIVES COMPARED.

A Wide or Narrow Bevel—Which?

BY R. F. HOLTERMANN.

We have seven or eight honey-knives from which to select during the extracting season, and there are two old knives of the D. A. Jones pattern that are general favorites with all our expert uncappers. These knives are always the first to be selected for use by those who know their business.

Fig. 1 shows the Bingham knife, and Fig. 2 the old Jones knife. The sectional views give all the differences there are in the construction of the two knives. By comparing Fig. 1 with Fig. 2 it will be seen that the contact surface of the Jones knife is broader than that of the Bingham, and also that the bevel is carried only a short distance on the comb, or from A to B in Fig. 3. In Fig. 2 it is carried all the way to the middle of the knife—that is, from C to D.

In theory there should be less friction when cutting with the Bingham knife, as the surface of contact is less; but the angle at which the knife is held in cutting is more difficult to maintain than with the old Jones knife. It is practically impossible to estimate the correct angle when cutting with the edge A, in Fig. 3. When the correct angle is not maintained, the knife will either be pressing into the comb at the heel B or the knife will be held at such an angle that the depth of capping will be increased. Either is objectionable; but in the former case the resistance will be much more increased because the heel B will be digging into the comb and flattening the cell walls.

In Fig. 4 there is much more to guide the knife when cutting, and therefore it is less difficult to keep the knife in a proper position for cutting. Of course we know that, where honey is acting as a lubricant, friction will play no important part; but to have the knife at point B press into the comb increases the force required to uncup, to some extent. This is an argument in favor of the Jones knife.

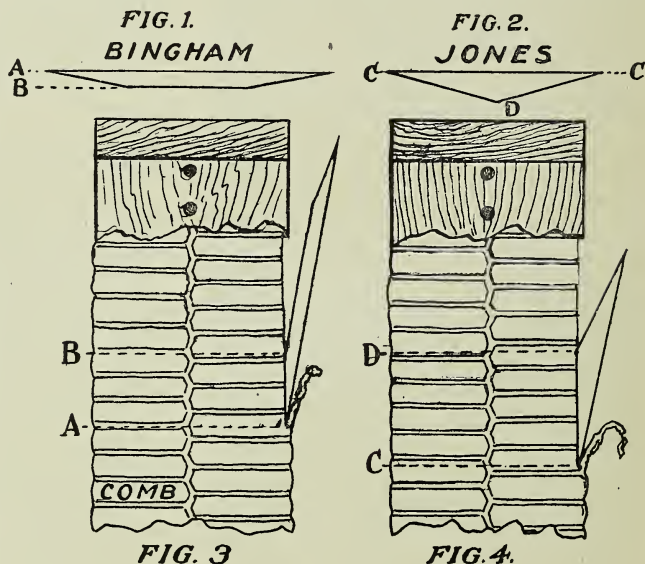
The strongest proof of all, however, is that I have found so many uncappers who, by practical experience, have found the old

Jones knife to do its work better than the more modern Bingham.

Another desirable feature in any honey-knife is that, when laid flat down on a straight surface, the shank and point shall not touch the surface. The blade, in other words, should be on a general curve instead of being straight.

Brantford, Ont., Can.

[Mr. Holtermann presents some pretty strong arguments in favor of the wide-beveled knife as shown in the cross-section, Figs. 2 and 4. Doubtless some of our readers have used both kinds of knives. In order to get at the truth of the matter, we should like to receive an expression from every one who has tried them side by side. Several of our Canadian correspondents have already told us that the Jones model was better than



the regular standard Bingham; and it would seem reasonable to suppose that the wide bevel would make more even work in uncapping. In the hands of an expert, possibly one would do as good work with the Bingham model as with the Jones blade; but we are sure of this: That with the ordinary Bingham knife the average *beginner*, at least, gouges in and out of the comb in a way that entails considerable work on the part of the bees in reconstructing the comb, and at the same time throws an unnecessary amount of honey and wax into the uncapping-can or the capping-melter as the case may be.

This is an exceedingly practicable subject for discussion, and we hope our readers will talk. The manufacturers will be willing, of

course, to furnish whatever the public wants.
—Ed.]

TWENTIETH-CENTURY SHIPPING-CASES.

Modern Methods of Shipping, by which a Large Part of the Leakage and Breakage of Combs will be Eliminated.

BY E. R. ROOT.

For several years back, both producers and buyers of comb honey have been gradually coming to the conviction that stronger and better shipping-cases are demanded by the trade; and that the policy of buying the cheapest shipping-cases that can be obtained, or, worse still, having them made at some local planing-mill, would, if continued, ultimately kill the comb-honey business, leaving the field exclusively to extracted honey or bulk or chunk honey. The very fact that comb-honey producers have been changing over to the production of extracted honey, that extracted honey is constantly coming nearer and nearer to the price of

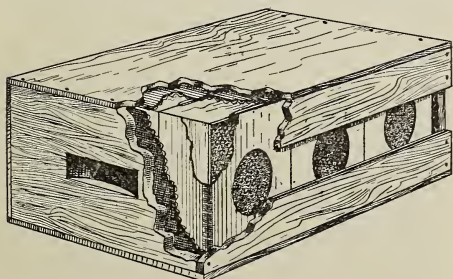


FIG. 1.

comb honey, and that some comb-honey buyers are refusing to take comb honey any more, shows only too plainly that the comb-honey business is doomed unless saner and safer methods are used for shipping the product; and, furthermore, there are not a few evidences to show that transportation companies are liable to advance the rates on comb honey. Taking all of these things into consideration, the movement toward saner methods of shipping so fragile a commodity has begun none too soon. We have been informed that several of the manufac-

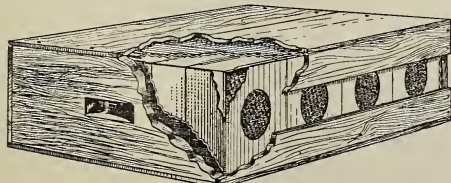


FIG. 2.

turers of bee-supplies expect to put on the market, this year or next, heavier and stronger shipping-cases. Whether they will all be of the pattern here shown we are not advised.

The subjoined illustrations show some such shipping-cases patterned after the modern requirements. In all of them it will be observed that each individual section is put into a cheap carton without top or bottom.

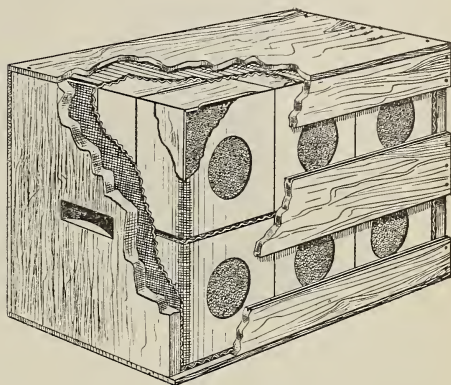


FIG. 3.

In the bottoms and ends of the cases and on top is placed corrugated paper. When the cases are made double-tier, a sheet of the same material is placed between the two tiers; and speaking of double-tier cases reminds us of the fact that this case for 24 sections is slightly stronger than a case of the same capacity where the sections are all in one tier; for the nearer a box or package can approach the shape of a cube, other things being equal, the stronger it can be made. Another advantage in favor of the double-tier case is that it allows the manufacturer to use the same size of covers and bottoms, and the same size of glass that he uses in the 12-lb. size, single-tier. The disadvantage of the double-tier cases is that they do not stack up quite as well. This is an advantage in another way—namely, that it prevents placing too great a weight on the case that may be at the bottom. However, the slightly deeper carton, as will be shown, will largely overcome this.

In this issue Dr. Miller, who has for years used a 24-lb. section-case, declares in favor of the double-tier case; and it is our opinion that, inasmuch as this case is stronger, and costs no more than the same capacity of single-tier, it should be used by the trade generally.

It will be noticed further that the Twentieth-century cases are made heavier. The ends are thicker; the sliding-cover feature is abandoned; and it is found that the scheme of

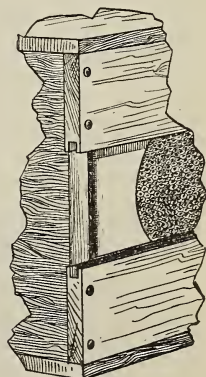


FIG. 4.

nailing the cover on the case stiffens it materially. In Fig. 5 it will be observed that where the covers are in two or three pieces they are halved together. This is very important; because if there is any shrinkage it will prevent small insects such as ants from getting into the sections.

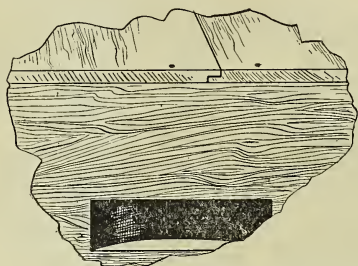


FIG. 5.

In all of these new cases the same width of glass—namely, two inches wide, is used throughout. In Fig. 4 it will be observed that the front cleats to hold the glass are let down into the end of the grain so as to bring the glass tight against the wood. The ends of the glass are then closed up with short strips of section stuff as on the old-style cases.

In Figs. 6, 7, 8, 9, will be seen a carton made of a cheap kind of strawboard $\frac{1}{2}$ inch deeper than the section is tall. This is to take any vertical strain that may be placed on the section. The carton can be folded flat as shown in Fig. 9, so as to take but very little room in shipping. A slight pressure at both ends will square it up as in Fig. 8, so that a section can be let down into it as seen in Fig. 6. When sold to a customer a rubber band holds the carton in place, see Fig. 7. A good many times it happens that the housewife is disgusted when she sees a nice box of honey punched into by other packages of groceries; and she will naturally decide that the *next time* she goes to market she will get along without honey if it is going to daub her other groceries like this.

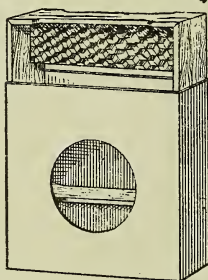


FIG. 6.

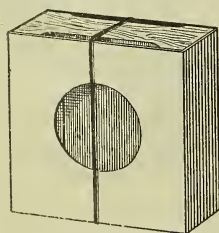


FIG. 7.

The Twentieth-century idea means that the sections should be protected, not only during shipping, but after they reach the market-basket of the consumer.

In Figs. 6 and 7 the artist shows a section with a foundation starter rather

than a built-out comb. Of course, an empty section is not sold to the consumer.

This brings up the all-important question whether the producer can afford to buy these more expensive cases. Let's see. One large buyer recently told us that the average of his breakage, carefully figured up in one season, of the total aggregate of his shipments of comb honey, showed a loss to the producer, which he had to charge up, of $11\frac{3}{10}$ per cent; and we are satisfied that this figure is low, if we take into consideration the average of shipments that go to the city from small producers, for this $11\frac{3}{10}$ per cent for breakage and leakage took into account shipments from *large* producers who know how to put up comb honey properly, as well as from the small ones, careless and indifferent. Twenty per cent is not far from the correct average loss to small producers; 25 per cent would be a very conservative estimate of all comb honey not shipped in carriers. Taking these figures as a basis, it will be seen that the average producer can well afford to pay the slight advance in the cost of these better cases rather than to suffer the constant leakage and breakage that have been charged up to him in his final account of sales.

We figured up in our issue for May 15 that the 20 per cent breakage and leakage, allowing 50 per cent market price for the broken product, means a loss of 35 cts. on a 24-lb. case; or on a crop of 10,000 lbs., of a loss of nearly \$150. Any one who can see through a ladder can easily see that for years and years bee-keepers have, by pursuing a policy of economy at a *wrong point* in their business, been paying a big tariff for their cheap cases that were any thing but cheap in the final settlement for the honey. It would pay them well to invest a small per cent more for their shipping-cases in the first place; for if it pays the producers of eggs and the makers of glass bottles and jelly-tumblers to put these commodities each in a separate compartment and in a strong and well-made box, it would *certainly* pay the comb-honey producer, whose goods are much more fragile, and the value of which, as a general thing, is considerably in excess of the value of eggs or jelly or honey in tumblers or bottles, to use at least as good a package.

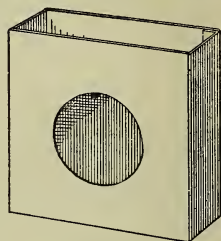


FIG. 8.

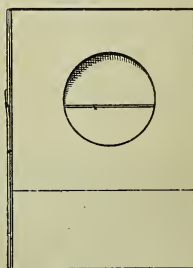


FIG. 9.



Fig. 1.—O. Poppleton's old apiary under grapevines, at Stuart, Florida.

BEE-KEEPING IN FLORIDA.

Some Representative Bee-men of Florida.

BY E. G. BALDWIN.

Continued from last issue.

Facts and figures are essential to the accurate exposition of any subject. But the personal equation is always more interesting. No account of bee-keeping in Florida could, therefore, be considered complete that did not give at least a glimpse at some of the men who have made it what it is to-day. The following is but a birdseye view of some of the most representative apiarists of our State. The list does not begin to contain all the men who stand high in the ranks of bee-men here, but it is at least representative. Not only are they among the most successful, but also the most prominent here for the longest time, and are also from the most widely diverse and separated portions of the State.

I think that anybody who knows him and his history would agree with me that Mr. Oscar Ogden Poppleton, of Stuart, Fla., is entitled to the term of prince and pioneer. While he has not been a bee-keeper in Florida alone for the greatest length of time, still he began keep-

ing [bees in Iowa away back in 1870—forty years ago—and has kept them continuously and as a specialty ever since. Mr. Alderman, of Wewahitchka, I think, comes next in length of years a bee-keeper. Mr. Poppleton came to Florida in 1886, and began bee-keeping as a business at once. For

two years (1888 and 1889) he was in Cuba, experimenting; then came back to Florida and has resided here continuously ever since. He has 280 colonies in six apiaries—2 on the mainland and 4 on the keys. He is, perhaps, better known outside the State (unless it be Mr. Hart) than any other man in the ranks. The reason is not only because of his clear thinking and daring execution of his plans, but also because of his facile pen. He is, indeed, the "grand old man" of Florida bee-men. He produces extracted honey exclusively.

He is the one man who *makes* his locality by moving to it. His home apiary at Stuart, Fla., is shown in Fig. 1. A twelve-horse-power launch affords his power, and draws a large lighter that carries 80 colonies of bees at one time. Every January he loads his mainland apiaries on this lighter and starts for Key Largo, off the southeast coast. Fig. 2 shows him just leaving the wharf at Stuart

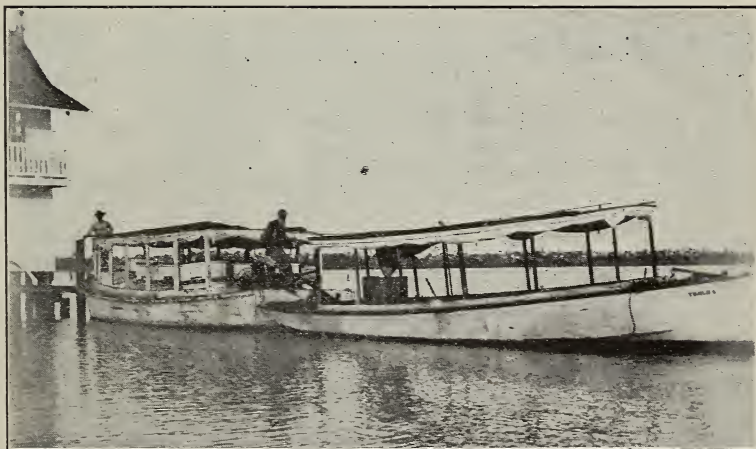


Fig. 2.—The two boats ready for leaving the wharf at Stuart for a 175-mile run to Key Largo with the first load of bees taken there.

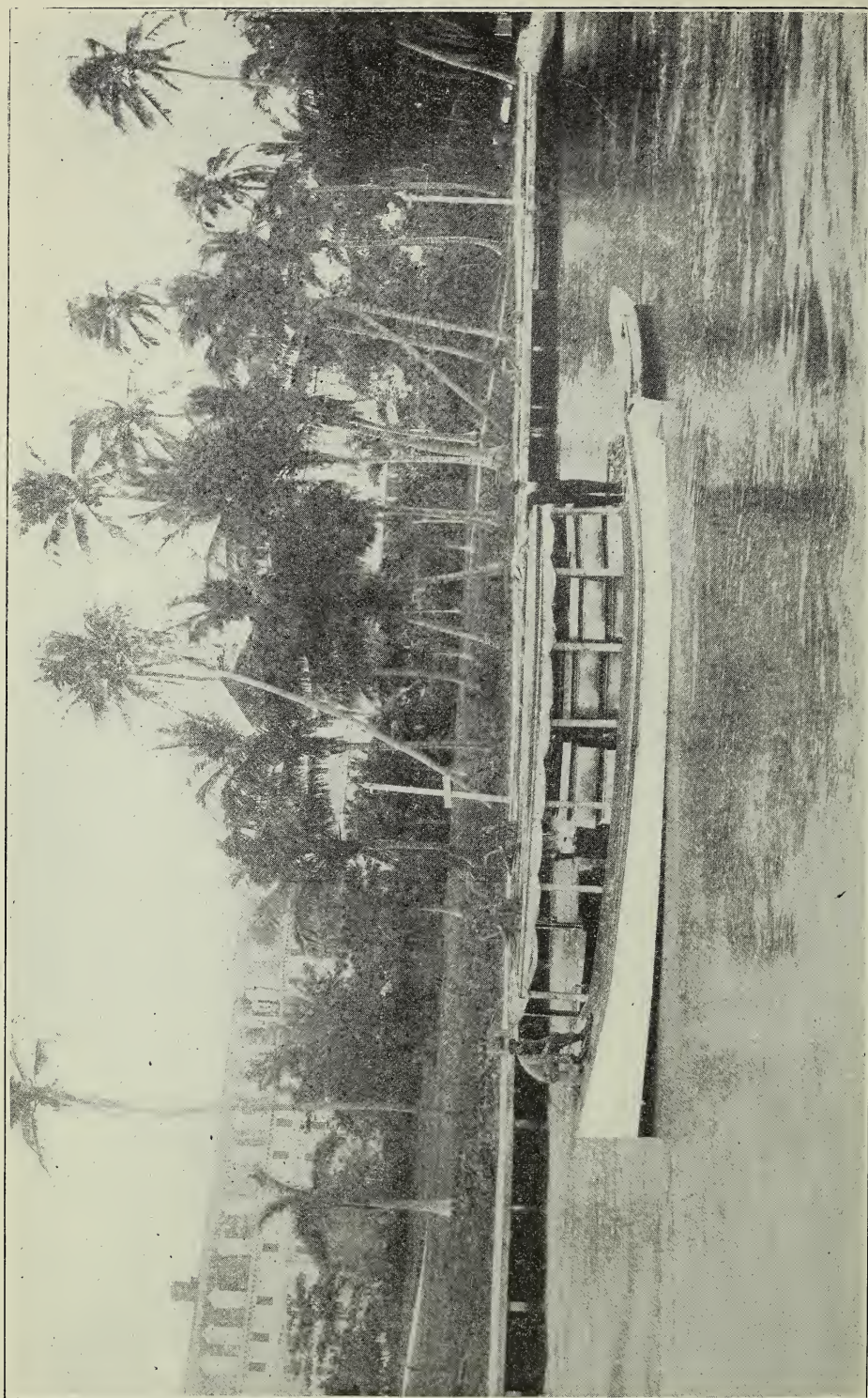


Fig. 3.—Boatload of bees owned by O. O. Poppleton, moving from Stuart, Florida, to the Keys, for honey of the manchineel trees. April, 1910. Taken *en passant* at Miami; there are 80 hives on the boat; Mr. Poppleton stands at stern; Royal Palm Hotel in the background; coconut palms in the foreground.

for the 175-mile run down to the keys. Two trips are required to carry the bees. *En route* he passes beautiful Palm Beach, and Fig. 3 shows him passing the dock there. Fig. 4 shows him just arrived on Key Largo; the hives as they were landed, and before they had been lined up or straightened up. Mr. Poppleton assures me that he finds it profitable to move his bees thus.

On the mainland his chief honey-sources are wild pennyroyal, saw palmetto, cabbage palmetto, and wild sunflower; on the keys, black mangrove, manchineel, pigeon cherry, and dogwood. He says the mangrove honey from the keys is of even better body than that further north on the coast.

He is the representative of the Long-Idea hive, that is one story high, $13\frac{1}{4} \times 36$ inches long; telescope top and tight bottom.

All the expansion is done laterally, not vertically, as in all other hives of any note in this country. He widens out instead of tiering up. He always paints his hives white, and uses full sheets of foundation. This year his crop of honey from the keys was 8500 lbs. as against 28,000 lbs. last year. He is almost the sole migrating bee-man in Florida to-day. Fig. 5 shows five snap-shots of his apiaries on the St. Lucie River, the North and South branches, about three miles above Stuart, Fla. The peculiar form of his hives can be seen in these pictures.

De Land, Fla.

To be continued.

SEPARATING THE HONEY FROM THE CAPPINGS WITHOUT THE USE OF A CAPPING-MELTER.

A Scheme that Looks as if It Might Have Considerable Merit.

BY D. E. LHOMMEDIEU.

A few years ago, while extracting, we ran out of room; and to make room my brother took a stick and "churned" the cappings till they were completely broken up. There was no strainer in the bottom of the box, nor honey-gate, so the cappings, honey and all, were together at the time. Since that time we have always mashed and churned the cappings before trying to strain the honey out. If the honey is drawn off before this is done, the plan does not work as well.

To mash the cappings we use a small-sized ball-club with the lower end sawed off to make it square. It takes only a few minutes to prepare them for straining.

After the mashing and turning, the cap-

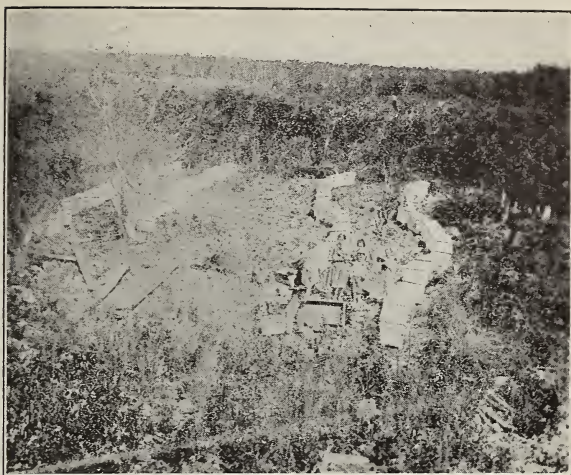


Fig. 4.—Mr. Poppleton's first apiary at Key Largo. This picture was taken just after the bees were landed, before the hives had been leveled up or the rows straightened.

pings and honey should be transferred to a coarse cheese-cloth strainer laid over a heavy galvanized wire screen supported near the top of the tank, as described in GLEANINGS some years ago. When another lot is to be strained we gather up the corners of the first lot, tie them with a string, and hang it over a can to drain a few days. The more honey cut off with the cappings, the better the plan works.

Those who have capping-melters that are satisfactory may not need to follow this method, and it may be a good many will pass this simple plan by without further thought; but I think that if a few would give it a trial it would be found to be very practical, especially with those who do not wish to bother with capping-melters.

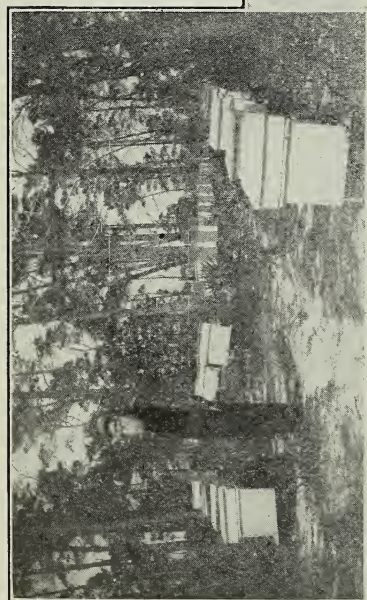
When the bees and extracting-combs are smoked so much that one can smell the smoke while uncapping the honey, that lot of cappings is already tainted, and should not be put in with the tank of good honey. Smoke should be used very sparingly when taking off surplus combs.

Colo., Ia.

[This certainly looks like a practical method for separating the honey from the cappings. The plan of melting the cappings as fast as they fall from the knife involves considerable expense, to say nothing of the discomfort of working right over a two-burner gasoline-stove when the weather is already too hot to work to the best advantage.]

Then, moreover, it has not yet been definitely determined that the separation by heat does not affect the flavor of honey in all cases. Our tests last summer seemed to show that the capping-melter did not darken or mar the quality of the honey.

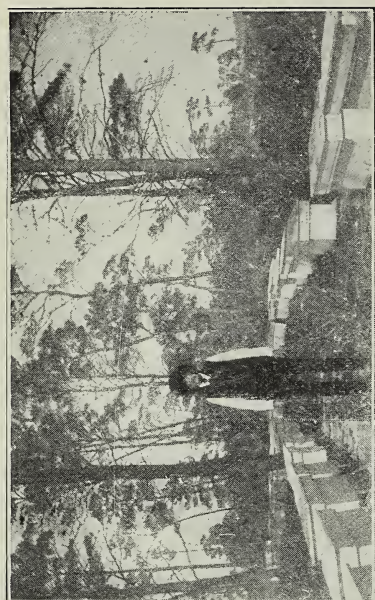
Friend L.'s plan is so simple and easily tried that we hope some producers will try it and report.—ED.]



North Fork apiary, four miles from Stuart;
100 colonies.

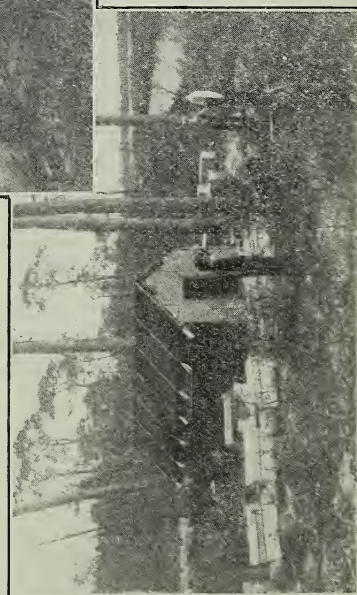


South Fork apiary. A navigable creek
runs within 30 yds. of the honey-house.



North Fork apiary, four miles from Stuart;
100 colonies.

South Fork apiary. A navigable creek
runs within 30 yds. of the honey-house.



South Fork apiary.

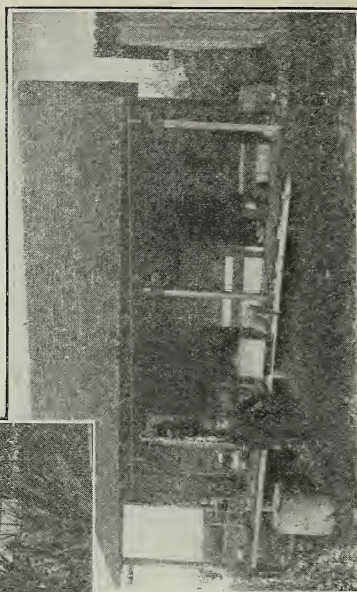


FIG. 5.—SOME OF MR. POPPLETON'S APIARIES NEAR STUART, FLA., SHOWING THE LONG-IDEA HIVES.



METCALFE'S WAY OF TAKING OFF HONEY IN THE FALL AFTER A LIGHT FLOW.

TAKING OFF A LIGHT FALL FLOW.

BY O. B. METCALFE.

When we have a late fall flow which does not fill the combs up well we have fallen into the habit of leaving the honey on until cold weather begins, and then we get into the yard at daylight some crisp morning, and, before the bees knew it, their supers are all off and in the honey-house. We do this wholesale taking-off of half-filled frames with a brush of weeds and an empty super set under the one we are working with.

Fig. 1 shows my partner at a hive with the cover removed, and his empty super standing where he can get it handily. In Fig. 2 he is prying loose the super combs, bees and all. In Fig. 3 he has picked up the super and is holding it on his hip while he places the empty one on the hive. In Fig. 4 it will be seen that he has set the super of honey and bees on top of the empty super and taken out one frame. With a big wisp of weeds he is brushing the bees from the next frame; and when he has "swiped"

them off the side next to him he pulls the comb over next to the wall of the hive, and proceeds to brush the further side of that second comb and the near side of the third comb, both in one operation. Thus he continues across the super until all the combs are brushed, when he picks up the comb which he first took out, and puts it in the beeless super which he has just set on the ground as in Fig. 5.

This method of taking off honey can be practiced only when the nights get cold enough for most of the bees to go below; and then those left above are so cold that they will not quickly fly up and get back on the combs. Neither can the method be used after a bumper fall flow when the combs have been filled "jam full," for they are then too sticky for the brush and bees. After a light fall flow, and when the combs can be left on until the nights get cool without granulating the honey, there is no method that compares with this one. There is one other condition, however; and that is, that a good power-driven outfit is needed to extract such honey if there is any quantity of it.

Mesilla Park, N. M.



Fig. 1.—Colonies are reduced by S. D. House to a single section of brood at the beginning of the clover-flow,

PRODUCTION OF FANCY COMB HONEY.

Some of the Details of the System Used in Producing an Exceptionally High Grade of Honey.

BY S. D. HOUSE.

In the production of comb honey we lay the foundation the fall preceding by giving as many colonies young queens as possible, reared during August, or the first half of September at the latest. My first work in the spring is to see that the brood-nest is in proper condition to permit the bees to develop to the greatest advantage. Some colonies will have too much honey, while others will be short. I do not allow solid combs of sealed honey on two sides of brood—I place all such at the outside. There should always be empty combs in the brood-nest during the months of April and May.

During the early part of May I clip all queens—the right wing the first year and the left wing the second year. This leaves the yearlings with both wings clipped. I also use a piece of section tacked on the hive, upon which I make a record when the queen was clipped, which enables me to tell at a glance the age of the queen. When it comes to hiving swarms, this system enables me to care for more swarms with less labor than if I were getting them out of a tree. If a swarm issues with a clipped queen I find her with-

in a few feet of the hive. She is caged; and while the swarm is still in the air I remove the brood section of the old hive and put in its place one with full sheets of foundation, and one or two empty combs to catch the pollen. I replace the supers, and when the swarm has returned I release the queen; and by the use of the shallow frame the work in the supers goes on as though the colony had not swarmed.

Usually, during fruit-bloom, most of the colonies need more room. A section of the brood-chamber filled with full sheets of foundation is given which is drawn out and occupied with brood and honey by the time clover opens; then the colonies are re-

duced to a single section of brood (Fig. 1), the section of new combs being left on the old stand. The bees from the other part of the hive are shaken; and if increase is desired, this section is placed upon a new stand and a queen-cell given that will hatch within a short time. The colony will be so reduced that, after the young queen hatches, they will destroy all other cells. (Cells in sectional hives are quickly destroyed, as they are built near the bottom-bar of the upper

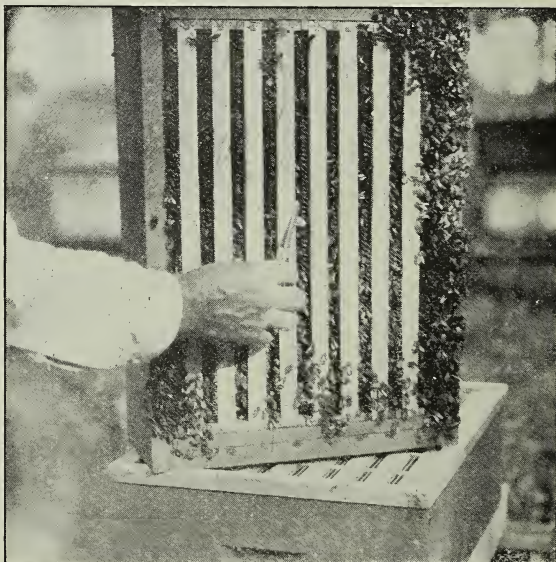


Fig. 2.—Queen-cells in sectional hives are nearly always built along the bottoms of the upper combs, and are thus easily removed.

set of combs (Fig. 2). If no increase is desired I stack the brood-chambers upon weak colonies; and at the close of the white-honey season these combs are given back to those colonies that have produced comb honey over a single section of brood-combs, which gives them a full-sized hive for winter.

Sometimes in hiving a swarm in a single section of a hive the bees will come out again. To overcome this I put an empty section of the hive under the one with frames for 48 hours. At the end of this time the colony has become established, and the empty sections must be removed or the bees will build comb from the bottom-bars of the frames.

I usually give one super, and, as soon as work is well started, I give the second one. In a good flow another super will be needed about every seven days until four have been put on. If a fifth super should be needed, I remove the upper one at the time the fifth is given, placing the new super next to the brood-nest. Many times, when the third super is given, the upper one will be finished. If so, I remove it. Comb-honey supers should be removed as soon as finished, whether one or more supers are on the hive, especially if built over old brood-combs. I have known three or four days' time to soil the surface of the honey so as to make it a No. 1 grade. My aim is to have the honey sealed away from the brood-nest; and as the close of the white flow approaches I put unfinished sections on colonies that have new brood-combs.

I use the Betsinger wire-cloth separator and super. This super has hanging wide frames that hold three no-beeway sections. There is a set-screw in one of the end-bars that holds the sections in place and brings the weight upon the end-bars instead of the bottom-bar, which is only $\frac{3}{16}$ inch thick. Fig. 3 shows the wire-cloth separator and wide frame. In the left end-bar is shown the set-screw. There is a bee-space between this end-bar and the section, and there are tin spacers nailed just under the top-bar on the end-bars that hold the separator away from the wide frame and sections, giving a longitudinal bee-space past the section. The



Fig. 3.—The Betsinger wire-cloth separator and brood-frame as used by S. D. House for eighteen years.

lower spacer is on the separator, the binding projecting $\frac{3}{8}$ inch below the wire cloth, not folded.

I have used these separators for the past eighteen years, and consider them the best and cheapest, as they are practically indestructible, and there is an immense amount of time saved in cleaning them compared with the fence separator. Then, too, there is no travel-stain to transmit to the honey. The super has the least possible bearings, and there is little use for propolis, as there is a bee-space on all sides of the separator and wide frames. If I were to start over again, the only change I would make would be to use a separator at the outside of the wide frames, making a double bee-space there.

The super cover should be of wood. If a cloth cover is used, it comes in contact with the section or wide frame, and the bees will glue it to them. It should never be used over comb-honey supers.

If there is any one thing that I am particular about it is comb foundation and its use for surplus honey. It must be pliable when given to the bees; and if they do not draw it out within 24 hours I know that they are

not ready for it and I give no more supers until they can draw it out. There is a great difference between drawing out the walls of foundation and building new wax on them. Wax that is exposed to the light and air will soon harden, and the bees will not work the side walls over as closely as they would if the wax were more pliable; and, even though they do work it over the inside is still hard, so that, when the consumer eats it, he has good reason to complain, and he usually does. Foundation should not go into the sections until the bees are ready to draw it out. I use full sheets cut $\frac{1}{4}$ inch short of sections fastened at top only, and I do not allow it even to touch the sections anywhere else. The sections are first placed in wide frames which hold them perfectly square; and when the foundation is fastened in there is no binding to the sides; when foundation binds on one side of the section it will warp from the opposite side, this being the usual cause of brace-combs to the separator.

The temperature of the foundation should be about 90 degrees when fastened in the frames. If fastened at a low temperature it will expand and buckle when it reaches a higher temperature. In brood-frames the expansion of the foundation draws it away from the tight wire. The remedy is a slack wire or a high temperature when the wire is imbedded.

Drawn-out combs in sections carried over from the year before have done more to de-

ter the sale of comb honey than all the manufactured-comb-honey canards ever printed. The wax, especially in the midrib, has become so hardened and tough that it is not eatable, and the consumer thinks he has the bogus article sure. If such bait sections are used they should be at the outside of the super, from which we usually get a lower grade of honey at the best. A bait section that has partially granulated should never be used, as the new honey stored in that comb will very soon granulate also.

Camillus, N. Y.

UNFAVORABLE CONDITIONS IN CALIFORNIA.

BY H. J. WARR.

The conditions in this locality are very unfavorable for a honey crop, the mortality rate averaging about 20 per cent, and in some apiaries as high as 50, with a large percentage of the remainder coming through no stronger than nuclei. The long dry summer and fall was, no doubt, the cause. Many colonies died with an abundance of honey and pollen in the hives, and in those apiaries where disease was present, but no apiarist, there is apt to be a grand spread of the same.

Early in the spring, prospects looked very favorable for a good crop, as weak as a number of the colonies were; but we had a lot of cold cloudy weather with exceptionally cold nights; and, although the strong colonies grew stronger, the weak ones barely held their own. Then we had a few warm days in which the strong colonies stored 10 to 20 pounds surplus of sage honey; but the clouds again came over, and on May 14 some portions of Southern California were blessed with what the weather man calls a "freak shower," the same amounting to over an inch in some localities; but in this neighborhood all we got was the cloudy weather followed by several days of hot dry winds from the desert, which put black sage beyond the nectar-yielding stage. Unless we have some heavy fogs or a more local rain, the chances for any surplus of white sage honey are very slim. Still, we have hopes of an extracting off wild buckwheat.

I am stating conditions in this locality.



A SAMPLE OF THE PRODUCTS OF THE FARM FROM AWAY OFF IN NEW ZEALAND. SEE OUR HOMES.

In others the prospects may be more favorable. Last year a locality within 20 miles of this one had a two-inch rain in April, while we had barely enough to lay the dust. They got several extractings while we got none. Several years previous it was just the opposite. This shows how variable conditions may be in California.

Perris, Cal., May 23.

A NEW WAY OF SCREENING ENTRANCES FOR SHIPMENT.

Preparation of Bees for Moving Long Distances.

BY WESLEY FOSTER.

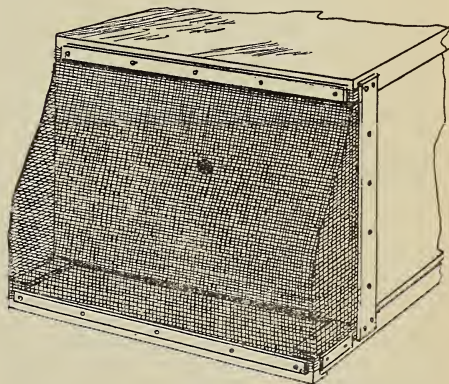
When one is preparing to move a carload of colonies a thousand miles it is necessary to have the bees locked up for two weeks at least. If the weather is warm, the bees will need abundant ventilation; and when one loads a car it is not as well to have a screen over the top of the hive, for the piling-up of the hives and the shaking of the train in motion will try the top screens unless some one or two inch pieces are placed over each tier of hives for the one above to rest on. The method here described will save time, protect the bees in all seasons of the year, and the hives will pack into a car much nicer than in any other way.

When the screens are used over the whole top of the hive, nailed on with lath, or fastened in a frame, the bees are exposed to the cold if there is any during the move. The heat of the cluster will pass off just about as fast as the bees can generate it. Now, we use a piece of wire cloth, two feet long and one foot wide, with a piece of lath a foot long nailed across each end as shown in the illustration. The lath at one end should be nailed to the hive-body with three or four good-sized shingle nails, the top end into the cover with two nails, and the bottom end into the bottom-board. The screen is then passed around the front end of the bottom-board and tacked down with little strips ($\frac{3}{8}$ inch thick and $\frac{1}{2}$ inch wide is large enough for these). The lath strip at the other end of the screen is pulled up snug at the other side of the hive, and nailed the same as the first strip. There will be found more screen at the top than at the bottom, on account of the extension of the bottom-board; but this extra is easily folded down, some at each end, and tacked down with another of the small strips, such as are used at the bottom. Finally, two lath strips nailed at each side of the back of the hive securely fasten the cover, body, and bottom-board firmly together the same as in front.

This screened-in porch on the front of the hive takes up no more room, for it does not extend beyond the bottom-board extension in front; and if the weather is cold the bees stay inside; while if the car should be stalled for several hours in a freight-yard, where the sun beats down unmercifully at times, even in our so-called winter months, the bees come out on this porch and get air.

An auger-hole $\frac{3}{4}$ inch in diameter may be bored a little above the entrance so the bees may easily come and go should the entrance become clogged with dead bees or dirt. A flat tin or wood cover works best with this arrangement, as the hives then pile up in the car as nicely as square blocks of wood. If gable or other uneven covers are used, wood strips will have to be used, on which to place the next tier above. If one has tight inner covers the outside cover may be removed, and the lath strips nailed into the inner cover the same as the regular flat tin or wood cover.

This method will work in shipping bees in less than carload lots short distances by rail. In this case the bees are generally



placed in a car that is being returned empty, and the hives are placed in one end, and braced so they will not slide around.

My uncle, Oliver Foster, has used this manner of fixing bees for shipment, with the greatest success, and I think he was the originator of the idea.

Boulder, Col.

NUCLEUS HIVES FOR QUEEN-BREEDERS.

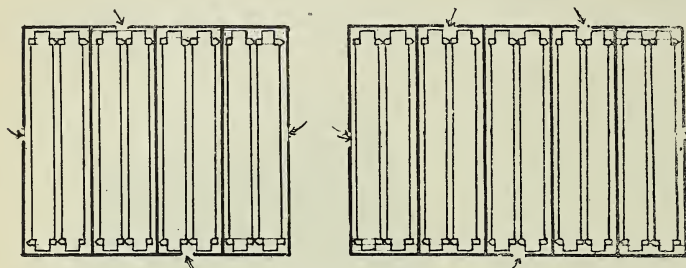
The Standard Frame Preferred.

BY D. E. BEST.

In my experience I have used a good many different-sized hives for getting my queens fertilized. Twin mating-boxes with small frames, or even good-sized nailing-cages, are all right if the queens can be taken out about as soon as they stop laying. If this is not done the bees are very likely to swarm out—I lost a good many valuable queens in this way. After a good deal of experimenting I finally decided that it did not pay me to have a smaller nucleus than two standard combs. The engraving represents my two sizes of hives, the first holding two nuclei, and the second five. The entrances are $\frac{3}{8}$ -inch holes bored near the bottom, with small pieces of tin pushed between the hive wall and the bottom-board for an alighting-board. The sides and divisions in these hives are all the same

height, so one cover does for all, and they are one or two inches higher than the top-bars of the frames, giving a space where I can cage queens. This also permits the use of heavy quilts between the tops of the frames and the cover.

Four or five nuclei together maintain a much more equal temperature than do those in separate small hives. The five-nuclei hive is a very good one, but there are two entrances on one side. This makes no difference, however, if a dividing-board 8 or 12 inches wide, and as high as the body of the hive, is fastened between the two.



D. E. BEST'S FOUR AND FIVE NUCLEI HIVES.

When I start these nuclei I go to some strong colonies, take the frames of sealed brood about ready to hatch, and the adhering bees, and place them in these hives, keeping the entrance closed for several days; then I open them toward evening and the bees always stay. I like to use the regular standard-sized frames in mating-boxes, for it is so handy to change them back and forth from the weaker to the stronger, etc., especially when some of them run short of stores. Then in the fall I can unite all of the nuclei so that every eight or ten will make a colony ready for winter.

Slatington, Pa.

SWARM CONTROL.

Securing the Full Honey Crop, Increase or Not, as Desired.

BY WILLIAM N. MILLER.

Before I tell you how I get a full crop of honey with 100 per cent increase or with none at all, I wish you would bear in mind the fact that I live in the southern part of Wisconsin, in what may be termed the White-clover Belt. I have often seen the pastures and parts of the field white with clover-blossoms, and a honey-flow that would last from the 18th of June to the 15th of July; so it is evident that the bees would be inclined to swarm if not taken care of.

I have tried many methods of swarm control and prevention—among them those of Messrs. Doolittle and Jones, but without satisfactory results. As I do not allow any of my colonies to cast a natural swarm, I find the following method most satisfactory.

Those colonies that need it are fed for stimulation in the spring; then, when the fruit-bloom comes, each is given an extracting-super (I believe a comb-honey super would fill the bill). I place the extracting-super, with combs, beneath the brood-chamber, for in this section of the country we often have a cold snap during fruit-bloom. When treated thus the bees will make no preparations to swarm until the main (clover) honey-flow is on. As soon as the honey is coming in from the clover I go to each colony that is preparing to swarm, and take it off its stand, placing an empty hive with

seven frames with full sheets of foundation in place of the old hive. In the middle of the new hive I place a frame of drawn comb that has had brood in it at least one season.

If I wish to produce comb honey I next place a super on top of the new brood-chamber; for extracted honey I place an excluder on top of the

new brood-chamber, and over this my extracting-super containing the frames from the old hive that have the least brood, so that I have only eight frames of brood left in the old hive. The extracting-supers given at the time of the fruit-bloom usually contain only two or three frames of brood, the rest of the combs containing honey.

I now shake the bees from all but two frames, allowing them to enter the new hive. The bees left on these two frames will care for the hatching brood. I prefer to have the queen go in with the last bees, so that she will not go into the comb-honey super with those which have entered first. The old or parent hive is set behind and a little to one side of the new hive, and left alone for seven days. At the end of that time the bees are shaken from all but two combs, and allowed to enter the new hive. If I want increase I now give the old hive a new location, and either a queen or a ripe queen-cell, and this nucleus will build up into a good colony by fall. If I do not want increase I cut out all the queen-cells, and at the end of six days I again shake all the bees in front of the new hive and use the combs with the remaining brood as I think best. Sometimes I use the brood that is left at the end of seven days to build up a weak colony.

Some may ask, "Do the shaken swarms prepare to swarm again?" About 6 per cent do; but the honey-flow is nearly over, and most of the time they "back out."

I place my second comb-honey super on top of the first; and when the bees go to work in it I put it beneath the first and next to the brood-chamber. As a result the bees draw out the sections, making them more plump and full. My object in arranging the supers thus is to avoid breaking the

cluster of bees. One might suppose the sections would become dark; but when full sheets of foundation are used in the brood-chamber it is more of a myth than a reality. The frames of drawn comb keep the queen and pollen out of the super. I have had the bees work through five supers. If any one else has tried this method I should like to know results.

Dodgeville, Wis., April 17.

FASTENING FOUNDATION IN BROOD-FRAMES.

The Melted-wax Plan Superior to the Groove-and-Wedge Top-bar; Shortened Top-bars Condemned.

BY R. C. AIKIN.

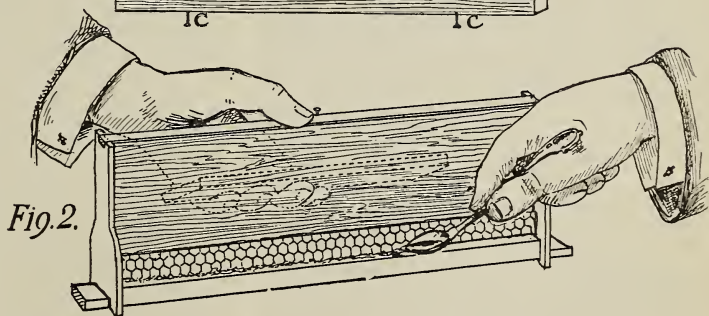
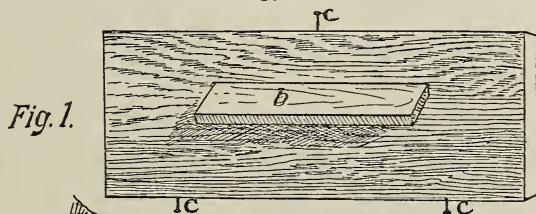
The short-top groove-and-wedge brood-frame, in many instances, is abominable; yet it is boomed as the "best ever." If one happens to have hives from two or more factories, or even from the same factory, but made at different times in its history, there is trouble because the frames drop down; or the spacing-staple is not in far enough for one hive or too far in for another. Old hives that were made just a few years ago, in which the thin edge stood up from the rabbet, and warped out, even though originally true to length, will let the modern short top-bar drop down. The full-length top-bar is more satisfactory than the short one, for with it we can use hives that were not specially made for the frame; or when, from any cause, there is a variation in the body length or in the staple-spacing, it makes no great difference.

It is, however, in the matter of the groove and wedge for fastening foundation that I must make the hardest kick. That plan is a nuisance and a useless expense. We can take those frames just as they come from the factory, and let them lie for weeks to season in this climate, then put them up, fill with starters, let them stand a week or two, and put bees on them, and then find, a few days later, that many of the wedges have fallen out and the foundation is down among the bottom-bars, so that it is almost impossible to remove a frame without tearing every thing to pieces. I find this a general complaint, and many have taken to nailing in the wedges to prevent their falling out.

To fasten foundation or starters, prepare a board with a handle, as shown in Fig. 1,

made of common $\frac{3}{8}$ -inch lumber, and about $\frac{1}{4}$ inch shorter than the inside length of the frame, and about $\frac{1}{8}$ inch narrower than the inside width. Bevel slightly the upper edge with the sharp edge the same side of the board as the handle. The edge of the handle should be beveled slightly so it will incline downward to make a good easy hold for the ends of the four fingers of the left hand, as in Fig. 2. The nails should be driven at the proper points in the edges, so that the board will extend a little less than half way through the frame.

Fig. 2 shows the board reversed, a frame on it, and a starter laid on the board, the fingers of the left hand being under the cleat and the thumb on top, reaching well over and pressing down on the bottom-bar. A pressure with the thumb merely enough to hold or support the board and frame in position, and at an incline so that the wax from the spoon will course down the top-bar and against the foundation, holds the frame in such a way that the top-bar is kept snug to the two nails that support it on the form-board. This not only makes the foundation line to the center, but keeps the top-bar from touching the form-board, so that if any wax runs through between the foundation and bar it does not touch the board, but will drip off into a pan over which the frame is held while the wax is poured on. You see if the frame fits the board snug, and wax runs between them, it waxes the two together. This is why the form-board is made $\frac{1}{8}$ inch narrower than the frame.



To melt the wax, one can use a little oil-stove, or even a common small burner lamp. If a frame is made to set it into having a wire or metal top so a tin can may be set above the chimney. The wax should be just hot enough to run well, but not so hot as to melt the edge of the foundation or to cool too slowly. If it is just barely liquid and the room cool it will congeal almost as fast as it touches the frame and foundation,

and as fast as one can handle the frames, so the work is done very rapidly. If these rules are followed, starters may be put in in this way faster than with groove and wedge.

Keep the form-board in the left hand; for if the melted wax is of the right temperature the work will proceed as fast as the spoon can be dropped into the wax-dish, the frame lifted off with the adhering starter, and another one put in its place. After a few times one will know just about how much to incline the frame both endwise and side-wise to make the wax run properly along the frame-top and against the foundation. On removing the frames from the form, just drop them at one side until there is quite a stack; then lay down the board from the left hand and pick up the frames one at a time, and run wax on the other side of the starter.

I will guarantee this method to be fully as rapid as the groove-and-wedge plan, and it will take not one whit more wax. It will even take less time if the wedges have to be nailed or glued in, and it is, without question, a good job when done.

It sometimes happens, especially in foul-brood localities, that it is desirable to cut out a comb and put in new starters; and the plain-surface top-bar is just as good to restart as it was the first time used.

Loveland, Colo.

EXPANSION AND CONTRACTION AS A MEANS OF SWARM CONTROL.

Small vs. Large Brood-chambers.

BY J. E. HAND.

The editorial on the control of swarming on pages 234, '5, April 15, is, in my opinion, a strong argument in favor of expansion and contraction as against large fixed brood-chambers. Just now, while many are advocating a standard hive of larger brood-chamber capacity than is afforded by the eight-frame Langstroth hive, it may be well to consider the method of expansion and contraction as outlined in the editorial mentioned. The question is no longer whether we want large brood-chambers, but whether we want large *fixed* brood-chambers like the Dadant, or smaller brood-chambers that are adapted to expansion by adding another during the breeding season, and which, by means of contraction at the beginning of the honey-flow, will force the bees into the supers, and, incidentally, control swarming. This is a subject that has been thrashed over in the bee-journals during the past quarter of a century, and yet there is still a wide diversity of opinion.

If one were to produce extracted honey exclusively, and at the same time control swarming, undoubtedly the large fixed brood-chamber would accomplish the desired results with the minimum of labor. On the other hand, if the bee-keeper wishes to produce comb honey exclusively, or in con-

nection with extracted honey, a modification of the method of expansion and contraction outlined in the editorial mentioned will give absolute control of the swarming impulse of bees, and at the same time compel them to store practically all the honey in sections instead of in a mammoth brood-chamber that is capable of swallowing up the entire season's crop during an ordinary honey-flow. Those who advocate expansion and contraction are frequently accused of advocating a small brood-chamber. The truth of the matter is, they have a small brood-chamber when it is needed, and the largest of any when a large one is needed.

After practicing expansion and contraction with sectional hives, all things considered I have about come to the conclusion that, in the legitimate occupation of honey-production, there is little gained by contracting to a smaller capacity of brood-chamber than is afforded by the eight-frame Langstroth hive. The question then arises, "What advantage has the sectional hive over an ordinary eight-frame hive expanded during the breeding season by the addition of another eight-frame body as outlined in the editorial mentioned?"

With my present light upon the subject of handling bees instead of hives and combs, as previously outlined in this journal, I am inclined to favor the use of full-depth Langstroth frames, and will, perhaps, use the eight-frame hive, not because I consider it better than the ten-frame size, but because I can use it interchangeably with my eight-frame sectional hives. Concerning methods of contracting brood-chambers, all my previous experience along this line proves to me that the method described in your editorial can not be depended upon as a means of swarm control in comb-honey production. Contracting the brood-chamber at the beginning of the honey-flow, and thus concentrating the brood, would defeat the plans of swarm control if the bees are compelled to draw out foundation in which to store section honey; at least, that is the way it usually works in this locality.

After much experimenting along the line of expansion and contraction I have come to the conclusion that the correct way to contract a brood-chamber or to combine the working force of two colonies in one set of supers, and, incidentally, control swarming, is to separate the bees from their brood right at the beginning of the honey-flow, having previously made all colonies strong by uniting, so that every hive will be crammed full of bees. This does away with all uncertainties, and settles the swarming question during an ordinary honey-flow; it may be accomplished by the interchanging of hives, and shaking and brushing the bees from the combs of one or more hives, allowing them to run into an empty hive that is placed on the stand formerly occupied by the colony treated. This method is known as shaken swarming, and is largely practiced as a means of swarm control in out-apiaries run for comb honey. Recent inventions, how-

ever, have simplified the method of separating the bees from their brood, eliminating the labor of interchanging hives, shaking and brushing, etc.

Birmingham, O.

[We do not claim that the plan we outlined in our April 15th issue is infallible. The fact is, that any of the methods that have been described will fail *sometimes*. Your system, not tried by the general public yet, may be infallible. That is to be determined.—Ed.]

EUROPEAN FOUL BROOD.

The Various Treatments for Saving the Combs; a Reply to H. H. Selwyn.

BY F. B. CAVANAGH.

I wish to answer Mr. Harley Selwyn in his experience with European foul brood, as outlined on page 254, April 15. He evidently confuses his treatment with that advocated in my article appearing in the March 1st issue, p. 130, while, as a matter of fact, I believe his treatment to be lacking in the vital elements which go to make a cure.

Mr. Selwyn makes the two common mistake of placing the diseased brood over the shaken swarm. In reality his treatment amounted to nothing more than placing a set of extracting-combs beneath the diseased hive with the queen confined below by an excluder. This is the old Demaree plan. I believe, when followed up for extracted honey. Now, if the reader will glance at the beginning of my article, March 1, p. 130, he may read the following: "Having observed the importance of Part I., or ridding the hive of diseased material, and Part II., establishing immunity in *all* colonies in the apiary, let us now consider," etc. Now, Mr. Selwyn omitted Part I. by placing the diseased material back on the shaken hive. He omitted Part II., viz., the establishment of immunity by making colonies very strong, requeening all in the yard with Italian stock. Hence I think he will agree with me on second thought that he failed entirely to include the vital principles which I believe constitute success during the honey-flow.

In the second column, p. 130, I did advocate the Demaree plan: but under the *following conditions only*; viz., strong colonies which have just been requeened with Italian stock, and which are just beginning to lay. This condition imposes a term of queenlessness just previous to the shift. Furthermore, a heavy honey-flow is specified, and the condition is mentioned that the disease has probably disappeared by this time. If under the conditions for which this treatment is permissible the disease has not yet disappeared, then the operator and I evidently can not agree on what constitutes a "strong colony," "slightly infected colony," and "heavy honey-flow."

Perhaps it will be apparent from the above why I do not recommend any thing except

the McEvoy treatment for the amateur. It takes a man who is an expert, and intimately familiar with every detail of the bee-keeping craft to succeed with the plans I have outlined for the professional.

I am glad to hear from Mr. Selwyn, and hope to be corrected if I have made any errors in my treatment. While I am fully satisfied that European foul brood is much easier to cure if properly treated than American, yet I feel that perhaps we are yet going a long way around to get a whack at it.

The matter of cleaning out extracting-combs after brood has all hatched hinges on the fact that bees store late-gathered honey in the center of their brood-nest. This being also their winter nest, the taste of honey they get from the combs is consumed in the beginning of winter, hence no danger is present that I have ever experienced or can see.

Hebron, Ind.

PROGRAM FOR THE NATIONAL.

E. B. TYRRELL, SEC.

Your Secretary believes that the average producer keeps his nose so close to the grindstone of production that he doesn't have time to learn the best selling system, and for that reason isn't getting all out of his product that he should. Believing this, I am anxious that the next convention go on record as the best one ever held with reference to real business methods being discussed. In addition to this selling question, there is the all-important one of new laws for the National, and this should be of interest to every member.

I want every member to read carefully the following proposed program. Think it over, and then tell me by return mail what subjects you would like cut out, and what ones added. Also be sure to tell me whom you would like to handle the different subjects. You see I am going to ask you to help me get up the program. I want to get something the members want, and I offer the one below simply as a starter.

1. President's address.
 2. General Manager's report.
 3. Secretary's report.
 4. How can a national campaign be conducted against foul brood?
 5. How to get State foul-brood laws.
 6. Shall the National be one separate association, or an aggregation of smaller ones?
 7. Is a national advertising campaign for selling honey practical?
 8. A national campaign for developing markets and selling the honey crop.
 9. The new constitution and by-laws.
 10. Developing the home market.
 11. A mail-order honey trade; how conducted.
 12. Question-box.
- Detroit, Mich.

Heads of Grain from Different Fields

Why the Bees Refused to Accept the Grafted Cells.

Dr. C. C. Miller.—Please inform me through the columns of GLEANINGS regarding cell-building. I have been trying to rear queens by the Doolittle method, but have had failures every time, as the bees would not accept the cells when I gave them the embryo cells composed of royal jelly, and three to five hours larvæ.

Nashville, Tenn.

B. K.

[Dr. Miller replies.]

It is hard to answer fully why you have failed, without knowing more fully what you have done, and I can only guess. It may be that you have tried to have the bees start cells over an excluder, with a laying queen below. In such a case bees are generally ready to continue cells already started, but averse to *starting* them unless the queen be old and perhaps near being superseded.

It may be, however, that you have unequipped a colony, giving the cells at once, and the bees have promptly emptied out the cells before discovering their queenlessness. Or you may have allowed the bees to have brood of their own on which they preferred to start cells. If you use bees having encephalitis the swarming fever to have already begun building queen-cells, and give them cells with no queen and no other unsealed brood in the hive, you ought to succeed, especially at a time when bees are gathering in abundance.

It may not be amiss to tell you of another way that will be sure to succeed, by which you can rear just as good queens—the way I rear queens for my own use, after having reared many queens by the other plan. About the time bees think of swarming naturally, go to the hive with your best queen; take out all the frames but two, giving these to another colony to be cared for a few days. It will be better if the two frames left are well filled, with little room in them for the queen to lay. Between these two frames put two or three empty frames, each having two starters of foundation. The starters may be four or five inches from each end, about two inches wide, and coming down to a point within two or three inches of the bottom-bar. In perhaps a week you ought to find these frames partly filled with comb containing eggs and young brood. Take them away and return the brood you took away. In your prepared frames there will be a border of eggs at the outer part of the comb. Trim away all, or nearly all, these eggs. Now put this frame in the center of a colony that has already begun starting queen-cells, of course removing the queen. The bees will do the rest, preferring this new comb to their own older combs.

Marango, Ill.

C. C. MILLER.

The Annual and Biennial Yellow Sweet Clover; a Case where Spraying in Bloom has Killed Bees.

I bought 100 lbs. of yellow-sweet-clover seed in August, 1909, and supposed I was buying the biennial variety, as I had heard nothing of the one-year kind. But the next spring I was surprised to see the stuff commence blooming when not more than three inches high, and it kept it up nearly all summer; but not a bee touched it so far as I could see. Thinking this might be a freak I waited till this spring to see, and it is the same thing over. I have some of the two-year variety, the seed coming from Kentucky, which is doing finely, and bees are now working on it right along. Does the annual variety produce honey in other places?

About the spraying of fruit-trees in bloom, I will say that a number of us bee-keepers here were badly hurt by the same this year.

Roswell, N. M.

R. B. SLEAZE.

[In regard to the yellow sweet clover that you bought in 1909, we have reports where this annual produced honey—in fact, it yielded honey right here in Medina. We also have reports where it did not yield honey, and others where the other variety did. When we first bought this sweet clover we did not suppose there was more than one variety of yellow; but in the last year or so we have been advertising the two. The annual is a little more rapid in growth, and in this locality it reaches the height of the ordinary white sweet clover. Indeed, you will find a photograph of it in our sweet-clover pamphlet, where it is six feet high. The bees were busy on it at the time the photograph was taken.]

It is possible the soil was not right, or that the climate is not suitable for the annual; and, again, another year it might yield very satisfactorily from the seed dropping down from the first year's growth.—ED.]

When Two Swarms Cluster Together, How Bees Sometimes Protect Queens from being Balled.

I have had experience like that of B. B. Fouch, of Chamberino, N. M., May 1, p. 278; and I am convinced that two or more swarms coming out at the same time will unite without friction; but when housing them, the bees of one swarm, finding a strange queen, immediately attack her. The probability is that, by observing closely, you will find either two or more balled queens, or you may find one carefully protected by her own bees.

Hatch, N. M., May 10.

S. MASON.

[Our correspondent refers to the fact that bees under some conditions will sometimes form around the queen to protect her from being balled by strange bees. This is a wonderful provision of nature, and it is the provision, probably, by which, in the case of ordinary uniting, one queen will be saved and the other killed or destroyed. It seldom happens that both queens are killed unless the bees get to fighting among themselves.—ED.]

Coöperative Selling.

In the article entitled "Coöperation in Selling Honey," by J. Hedstrom, April 1, page 204, he says, "Now, a few of the larger bee-keepers get together to sell honey on a coöperative plan, but somehow they do not seem to get the reasonable price they expected. They talk the matter over, and find that there is honey on the shelf beside theirs at a lower price. A small bee-keeper had to sell his crop, as he needed the money; and as the commission man wanted to make a little something for his trouble, this small producer was forced to take less for his honey."

Now, could not the larger bee-keeper buy the honey from the small producer, at a reasonable price—that is, if the small producer had to sell his crop because of being in need of money, and cut out the commission man?

May the day come speedily when both the small and the large bee-keepers will sell on a coöperative plan!

Botkins, O.

J. A. BECHER.

Hiving a Swarm in a Hive with a Laying-worker Colony.

I wish to tell your subscribers how, without any hive manipulation, I got ahead of a colony that had laying workers. They had refused to accept a queen of any kind, having gone for several months without one, when one of my boys brought in a rather large swarm of bees from the woods late one evening. As it was dark I lifted the cover of the hive and shook them in over the frames, giving them all a good smoking as they went in. On looking at them the following morning I found a few dead bees in front, but a fine large dark-colored queen inside, a little shy, but enjoying all the privileges of housekeeping. Since then they have done well.

Austin, Texas.

W. W. DURHAM.

The Alexander Veil as a Swarm-catcher.

I have demonstrated the usefulness of the Alexander veil for capturing and carrying a swarm of bees, and, furthermore, keeping the swarm over night until a hive could be made ready. There is one precaution needed to succeed; and that is, to be sure that the lapping of the wire and of the cloth (both top and skirt) is bee-tight. To prepare, fold the skirt down over the wire, like turning up a coat-sleeve just enough to control the cloth. Then when the swarm has been jarred down into the veil, quickly gather the edges of the skirt into the hand, and tie securely in the center with a string, making a bow-knot if the distance to be carried is short. This all presupposes that a swarm can be reached in any practicable way. In an emergency it works like a charm.

Hoboken, N. J.

C. D. C.

How Bees Sometimes Carry Eggs or Larvæ for Building Cells.

I got an Italian queen from which to rear some queens. On May 18 I went to my strongest colony to get some bees to form a nucleus, and I found the hive broodless. I took some bees to make my nucleus, and on May 20 I put a frame of brood into the queenless(?) colony; but it did not build any queen-cells on the brood. I examined the frame of brood from time to time, but no queen-cells were started.

To-day, May 29, I proceeded to find the queen, which I thought must be there. I did not find a queen nor any brood, excepting the frame I put in; but I did find a completed queen-cell all alone on another comb. How did they get the egg into that queen-cell on that comb? I put my queen in an extracting-super, and put it on this hive with a queen-excluder between, after cutting out the queen-cell and taking out the frame of brood. Do you think it safe to take out the queen-excluder?

Alma, Wis.

J. J. ZIMMERMANN.

[It is evident that the so-called queenless colony must have had something for a time which it recognized as a queen. It might have had fertile workers, or it may have had a poor virgin which was subsequently lost on a mating-trip.

There is nothing strange about the cell being built on some comb other than that which contained brood. It is a fact now well established, that bees will move eggs or larvæ to queen-cups already started on other combs. It is pretty well established, also, that bees may, under stress of circumstances, steal eggs from other hives, and, with the stolen eggs, raise queens in their own hive.

It would be rather risky business to put the queen that you bought in the upper story of the hive you mention, with only perforated zinc between the two stories. We should rather feel that the bees from below, even though the cell were destroyed, would come up and kill the queen above. We should not be surprised at any thing they might do under such circumstances.—Ed.]

A Swarm's Queen that Returned to the Hive from which the Swarm Issued.

I bought three colonies of bees last spring, and had my first swarm July 1. I carried the cluster to a Danzenbaker hive which was ready, and dumped the bees in front of it, close to the entrance. About half of the swarm went in within two minutes, and stayed about five minutes; then all came out. In five minutes more the swarm was back on the limb from which I had taken it. I then sawed off the limb while the bees were still on it and carried it to the hive, shaking them off in front of it as before. All but about a coffee-cupful soon entered. I then stirred these about with my finger, looking for the queen, as I wished to catch her and clip her wing.

Presently I saw her, but she escaped, and started to fly. She circled about for a few seconds, then went straight into the hive from which she had come out. In an instant the bees that had gone into the hive seemed to be greatly excited. In another minute they were all out, the whole orchard seeming to be alive with flying bees, they evidently hunting the queen. They kept it up for about five minutes, and then I noticed them entering the mother-hive, into which their queen had gone. In three minutes no bees were in sight except a few field-workers that were coming home.

Strawberry Ridge, Pa.

J. SWITZER.

To Keep Down Increase.

What is the best way to keep down increase? I have 25 hives, and don't want any more, as I have no room to set them. Would this do? When a swarm comes out, hive it on the old stand in a new hive. Shake all the bees from the brood-frames of the hive that swarmed; then put these frames over excluders on weak hives until the brood is hatched, or leave them on to be extracted when filled.

Christiansburg, Va.

R. E. HICKOK.

[Your plan would probably work all right provided you could be in the apiary to see when swarms issue; but if you could not, perhaps the shaken-swarm plan would be the best for you to follow. Then, after 21 days, shake the remaining bees, that have meanwhile hatched in the parent colony, before the entrance of the new hive on the old stand, being careful to exclude any virgins that may have hatched. The bees will then have been satisfied in

their desire to swarm. They will have a set of new combs and new surroundings, and, ordinarily, they will work with great vigor.—Ed.]

Bee-stings for Rheumatism.

Can you give me any information or refer me to any literature on the value of the bee-sting as a treatment for rheumatism?

Reading, Mass.

E. E. COPELAND.

[You will find the general discussion of bee-stings and rheumatism given in the following issues of this journal: Feb. 1, 1908, p. 153; Dec. 1, 1909, p. 784; Aug. 1, 1910, page 530. See following item. Similar communications have appeared in these columns at frequent intervals for the last thirty years.

We may say in relation to this general subject that it is a question whether the bee-sting poison is of any value in the treatment of rheumatism; and yet we have talked with persons who were positive that they received marked benefit. We can not now recall to mind who these parties were, as we saw them at bee conventions.

Mr. Wm. A. Selser, 10 Vine St., Philadelphia, has had a number of rheumatic people who have come to him quite regularly to receive their doses of bee-stings. We suggest that all interested write to him for further particulars.—Ed.]

Another Instance where Stings Cured Rheumatism.

A practicing physician here in Ithaca lost the entire use of his right arm from rheumatism, and was told by his fellow physicians that the trouble would be permanent. He himself was convinced of it; but when all other remedies had failed he resorted to bee-stings, and made three applications of about twenty-five stings each. The pain almost immediately subsided. At first there was no visible effect. Later, however, the arm swelled from the wrist to the shoulder; but as the rheumatic pain almost immediately subsided, the swelling seemed of but little consequence. The cure seems permanent and complete, save a slight stiffness of the finger-joints. On occasion I have supplied bees for this physician in his practice.

Ithaca, N. Y.

(REV.) E. L. DRESSER.

The Amount of Honey and Wax Produced Annually in the United States.

What would be a fair estimate of the value of honey and wax produced each year in the United States? I am preparing a paper on the insects of economic importance, and this information would be appreciated.

Geneseo, N. Y.

G. A. BAILEY.

[Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C., issued a bulletin, No. 75, Part VI, in which he places the annual amount of honey, both comb and extracted, at twenty millions of dollars, and wax at two millions. We regard these estimates as fairly correct.—Ed.]

Bee-martins.

I have a bird-house in the yard where thirty martins have nested. Will they be likely to eat my bees? Let me know about this.

North Manchester, Ind.

T. A. PEABODY.

[Unless you are rearing queens you need have no fear that the martins will cause any serious trouble; and even then they will do no damage except, probably, to catch a queen on the wing. If martins or king-birds kill the bees you can easily determine the fact by watching them when they fly across the apiaries when the bees are in the air thickest. If the birds have formed an appetite for eating bees they will catch them on the wing. With a shotgun you can very easily stop their depredations.—Ed.]

Sweet Clover Chokes Irrigating-ditches.

I note what you say on p. 193, April 1, about sweet clover. That may look all right to you Eastern fellows who have no irrigating-ditches to keep clean; but we Westerners who farm here in irrigated districts certainly have no use for sweet clover. It is one of the worst weeds that grow. On the ditches it will completely cover the banks if left alone, and soon falls down and checks the water. It grows 8 ft. tall in some places. As a feed it is absolutely worthless so far as I know, for our stock will not touch it unless starving. However, it is not hard to keep out of the fields.

Hansen, Ida., April 14.

OTTO BAILY.

Our Homes

A. I. Root

Of such is the kingdom of heaven.—MATTH. 19: 14.

They shall beat their swords into plowshares, and their spears into pruning-hooks.—MICAH 4: 3.

It rejoices my heart to look over the farm papers, not only of the United States, but of the whole wide world. As a rule they are pure and clean, every one of them, thank God. Not a farm paper of any standing, and, in fact, I do not know now that there is one of *any* kind, defends the liquor business or contains anything that is unfit for the family circle. There are so many of them now among our exchanges that about all I can do is to look at the pictures; and when my time is not too limited I sometimes turn to the poultry departments, gardening, etc.

Of late there has been quite a fashion to have some nice pictures of rural scenes on the front cover of most of the farm papers. There was a spell when it seemed to be all the fashion to have a nice-looking country girl; and once I began to think they were going too far in that direction—that is, making too much of “handsome is” instead of “handsome does.” Where this farmer’s daughter was out feeding the chickens, without turning to the camera, it somehow looked a little better. Perhaps I had better be a little more definite. I was afraid the demand for *good-looking* girls might induce our girls to get on a strife and spend too much time in primping and fixing themselves up, instead of helping their mothers, feeding the chickens, etc., and in this way *discourage* some of the very best girls in the whole wide world who did not happen to be as attractive at first sight. Well, lately there has been a new departure in regard to the pictures in the farm papers; and one of the very best that ever came under my eye I have copied from the *New Zealand Farmer* for April, 1911. Turn over to page 370 and see if you do not agree with me. May the Lord be praised for that picture. Who is there among us that can resist this mute appeal for help and protection, especially the latter? Who is there among us who will not volunteer to give the last drop of blood in his veins to protect these “little ones” from the damning influences of saloons, gambling-houses, and houses of prostitution? “For of such is the kingdom of heaven.”

Somebody suggests that this is a fake picture—that the baby was not really sitting on a squash or pumpkin when the picture was taken; but I am sure it is honest and genuine, and that New Zealand can be congratulated on having produced a wonderful squash or pumpkin as well as on having given the world this bright healthy baby, so ready to take in every thing that this teeming world has to offer.

I presume that most of our readers whose eyes rest on these pages are either fathers or

mothers; and those who are not, I hope may, in God’s providence, become fathers and mothers in his own due time.

Now, friends, what are we living for? Why did God see fit to give you and me a human life to live? Was it that in due time we might grow up and grow squashes that will win prizes? Yes, even growing squashes is praiseworthy; but, oh dear me! what are *squashes* compared with the responsibility of giving life to little ones like the baby in our picture? Even Jesus, our Lord and Master, said, when he looked on them, “Of such is the kingdom of heaven.” The sacred duty is laid on our shoulders to “be fruitful, and multiply, and replenish the earth.” It is one thing, and a commendable one, to give the world another bright healthy baby; but a far more serious and sacred responsibility is to give that baby the *best kind* of environment.

I have just received from the express office three blackberry-plants that cost me a dollar apiece. A bee-keeper who has no interest in the matter says these blackberries will cover a trellis like a grapevine. In fact, a single vine has been known to grow forty feet in one season, and has borne more than two bushels of berries. I will tell you more about it later on. You may be sure I gave those three precious plants the very best ground on the premises. I am watering them just right, and am shading them from the excessive heat of the sun, and I not only go around night and morning, but several times during the day, to see if they are starting to grow. I am giving them the very best “environment” I know how. The ground is cultivated and mellowed up around them almost down to their roots, for I am exceedingly anxious they should do something in our clay soil here in Ohio as they have been doing in sandy New Jersey. Now, it is a commendable thing to give a new plant or a new fruit the most careful and guarded environment; but, O my dear sister or brother! how much more important is it to give the little ones of the household this same constant, kind, loving care! The mothers are doing this already, and will continue to do it without very much encouragement; and the fathers are doing pretty well—I think a little better than they have been doing in times past. We are all of us getting to be more and more awakened to the importance of giving these babies good pure milk, and letting them have plenty of air and sunshine; notwithstanding, however, the papers have been reporting, during the recent hot spell, too big a death-rate among the babies. Now, milk for their bodies is important—very much more so than making a hobby of a new blackberry. But there are things more important than the milk and ice, or even the air the babies are obliged to breathe. We do not know whether the baby in the pic-

ture is a boy or a girl; but suppose near his home is a beer-shop, and that, sooner or later, some fiend in human form should, for the sake of a few dirty nickels, coax that boy or girl to take a drink, and finally acquire a taste for intoxicating liquor.

Right at the very entrance to the gateway to Yellowstone National Park is a little town. I have forgotten its name. But the ticket agent at that place, when he saw my name on my baggage, scraped up acquaintance, and finally volunteered the information that the whole town—men, women, and children—were going crazy over drinking beer. He said the fathers and mothers both drank beer, the children all drank beer, and the *babies* were taught to like beer before they could talk or walk; and yet Uncle Sam has set apart a great extent of territory, and employed soldiers to watch over it and protect the wild animals and look after the beauty of the landscape, to the extent of arresting any camper who might throw an empty tin can on the ground instead of digging a hole and burying it. Uncle Sam has done all this, and I rejoice that he has recognized the fitness of things enough to preserve the natural beauty and attractiveness of this wonderful region; but right at the very entrance of that park are these hell-breeding saloons, and nothing is done by the government to prevent the *babies* getting a taste for liquor. This state of affairs may not prevail there just now. I sincerely hope a reform has come about; but at the time of my visit, as you may remember, drinks were sold all over the park; and one of our party, a rich banker, was too drunk most of the time to keep still. He even went off fishing on one of those beautiful lakes, and not only tried to get every one on the boat to take a drink from some of his various bottles, but he became so drunk himself that he had to be carried back to the hotel. One nice bright-looking chap, who had evidently been considering me a sort of prohibition crank, came over to my side and said he had had enough of loaded bankers who paraded their money and their expensive liquors at one and the same time. Let me digress a little right here.

Next Sunday, May 28, is to be "peace" Sunday. Sermons on universal peace are to be preached all over the world; and the Sunday-schools are to have the second one of my texts for their golden text. The people of the whole wide world are to send up petitions to God and to their rulers, among all the nations of the earth, to resort to arbitration instead of *war*, for settling their mutual differences. I have before mentioned the fact that the almost countless millions that the world is spending for ships of war and standing armies is worse than wasted. Let me make a little extract from the *Sunday School Times*:

For foreign missions Christians spend about \$22,000,000; for war, Germany alone spends \$160,000,000. Lloyd George, British Chancellor of the Exchequer, reports that the various countries of the world spend annually \$2,250,000,000 for war—an increase of \$1,000,000,000 in twenty years, exclusive of pensions.

Now let me digress still again:

Some years ago there was a poor woman living a little out of our town who had a small piece of land. She made her living by growing garden stuff and carrying it on foot to the hotels. I think almost my first acquaintance with her was in stopping to admire some beautiful cucumbers and other garden stuff that she had succeeded in growing in advance of her neighbors. Mrs. Root and I soon became pretty well acquainted with her. One day she came to town on foot—a distance of about a mile and a half—with a little money she had saved up to pay the tax on her little place. There had been an advance in taxation that she did not know about. I think she had saved for taxes about ten dollars; and she had figured that, after paying the taxes, there would be money enough left to buy some sheets for bedding, of which she stood very much in need; but on her way home she stopped at our house and told Mrs. Root her troubles. The taxes took almost every cent of her little hoard, and she was forced to go home without the sheeting. She felt so bad about it that she cried; and she told Mrs. Root how hard she had worked to support herself and pay the taxes. Mrs. Root felt so sorry for her that she made her a present of some sheeting she had in the house. One reason *why* she was so anxious about the sheets was, the ones she had long been using were getting to be so old and shabby that she feared to have anybody see them in case she might be sick. Poor as she was, she had a commendable pride in having things "decent and in order" when old age or sickness should make it impossible for her any longer to keep up the garden and carry the produce to town. Now, there are thousands of poor hard-working people, even to-day, like this woman, who find it quite a burden to pay their taxes. Well, then, where does this money, the hard earnings of our hard-working people, go to? What becomes of it? I am sorry to say I feel sad to think that a large proportion of it (I do not know just how much) goes to build great war-ships and keep up a standing army. Another part goes into the hands of greedy grafters who are sent to the different capitals of our States to look after and protect (!) the money that is collected by taxation. *Some* of the money, thank God, goes to establish sanitary measures for protecting the babies like the one in the picture; but our own government is in partnership—at least if I have made no mistake—with the liquor business, and *protects* the traffic that furnishes beer to the innocent babies. This same government is making quite a stir, as I have mentioned in another column, about selling rotten eggs to the bakers to make cake for the children; and this traffic certainly ought to be stopped, without question; but what is an unwholesome cake for the children, when compared with beer, that blasts their young lives and sends them down to the ignominy of a drunkard's grave? May God be praised, however, that a better time is coming.

These same working people are fast realizing the fact that the laws of our land permit *us* to decide who shall fill our public offices. In some States (thank God again), even the poor hard-working women, such as I have described, can have a voice in deciding whether saloons shall be permitted to go on, and trip up their children or not; and I shall rejoice and praise God when our own State of Ohio will permit our wives and mothers, and women such as I have described, to have a voice in deciding who shall handle our public funds and enact our laws. And, finally, I believe there *is* just now a *world-wide* tendency to "beat our swords into plowshares, and our spears into pruning-hooks," and declare that war, carnage, and bloodshed shall be no more resorted to, to settle differences between nations. Our own President, if I am rightly informed, is using the great weight of his influence to settle peaceably all misunderstandings, and especially troubles between nations, by the agency of *world-wide arbitration* instead of war.

OUR "CROP" OF BOYS AND GIRLS.

In a recent issue I spoke of the state of affairs in Newark, O., and the effects on the school boys and girls of that city. Then, by way of contrast, I spoke of what our government is doing to educate our boys and to give them a taste for rural pursuits, especially in the line of growing corn. Well, while keeping the above in your mind I

want to call your attention to a recent statement going through the papers, to the effect that Adolph Busch, the man who gave his wife a crown valued at \$200,000, has been recently going through Kansas (prohibition Kansas, bear in mind), and carrying a supply of his famous (or infamous) beer, and giving it out free of charge to all the boys and girls he could call together at every station where his car stopped. I have tried to find the periodical that published this information, but I did not succeed in getting hold of it. But this periodical seemed to carry the idea that there was no help nor redress through law for this kind of work. This multi-millionaire brewer could go ahead in "cultivating the appetite" among the boys and men at every little town in Kansas if he chose to do so, and no United States law nor any State law of Kansas could prevent his doing so. Rotten eggs, as I have told you in another place, have been tabooed *by law* because they might injure the health of the American people. But Adolph Busch's beer, that *damns both body and soul*, can be given out freely to children of any age, and we are helpless just because it seems to be an "unwritten law" that our President, our governors—at least the greater part of them—and our mayors and policemen must "keep hands off" (at least to a certain extent), whenever the liquor-traffic is likely to be interfered with. The time is coming when our people will be permitted to put good men in office by *direct legislation*, and may God hasten the day.

POULTRY DEPARTMENT

A. I. Root.

EGG TONIC FOR POULTRY, AND DRUGS FOR CHICKENS GENERALLY; ALSO SOME OTHER MATTERS.

Mr. A. I. Root:—I had intended to write you some time ago, advising you to keep your chickens pure. We have experimented quite a little along this line, and find that, all in all, the pure-bred do much better than the crosses. Again, in your March poultry talks you refer to the Conkey remedies. Now, you have a big influence, and I wish you would retract that statement concerning feeding for eggs. I admit that all of these so-called egg-foods are readily eaten by the hens, and will increase the egg-yield. But stop feeding these prepared foods, and your chickens will lay less than they did before. Again, for the best results you must feed it to the young or growing stock. It seems to me that it acts something like the nature of a drug, which, if once used to it, one must continue its use or results will not be satisfactory. We tried this four years ago, and the next year we did not use any kind of egg-forcing food; but the results were far from satisfactory. So we decided to stop its use *entirely*. Some time ago we sent in a record to a poultry journal of eggs found from ten pullets before 7½ months old, by one of our patrons. On referring to the record the editors said the most remarkable part of it was that the party didn't use any kind of stimulants or egg-food preparations. Said editor is in a company manufacturing and selling such an article. At present we are getting 5, 6, 7, and 8 eggs per pen of 9 females, and no stock food of any kind is used. Wheat, corn, oats, mangles, a little buckwheat and sunflower seed, and a wet mash with a little beef scrap once a week is fed. This, with bred-to-lay hens housed in curtain-front houses, and good care, does it.

Excuse my referring to ourselves in this letter, but it was the only way to tell of my experience

with this stuff. If I am not mistaken, Mr. Philo and others also claim that, if good care and feed are given, no condition or egg-food of any kind is needed. While it may not do much harm with hens for market eggs, I urge you to do all against its use in the breeding-pens. Even in the former case I am confident that, with common-sense care, they will do every bit as well without.

I am glad you still use and recommend the fireless brooder. Many people seem to make a failure with it. At present we have 300 chicks in them, and will have a few hundred more in a few days.

Lititz, Pa., April 27.

A. B. SNAVELY.

Friend S., we are exceedingly glad to get a report from practical experience; and I thoroughly indorse the stand you take in regard to medicines, especially stimulants for poultry or any other farm stock. Perhaps I had better explain to our readers that, in response to what I considered an extravagant claim for egg-foods, I sent for a 25-cent package, and, the surprise on my part was to see the chickens, big and little, so crazy for it. It was so pungent with Cayenne pepper or something else that I could not mix up a mash without coughing or sneezing. It was sold with the usual understanding—"money back if it does not increase the egg-yield." As the egg-yield seemed to increase immediately, I ascribed it to the virtues of the tonic. But I feel pretty well satisfied now that the increase was largely due to the mixture of bran and

shorts to be used with the egg- tonic. Before the 25-cent package was used up I ordered a 25-lb. pailful from the Crenshaw Brothers, of Tampa, Fla. As they had only the 25-cent Conkey tonic, they sent me a pail of Manda Lee's egg- tonic or egg- food. This was sold with the same guarantee—"money back," etc. Now, Manda Lee claims his tonic is composed largely of dried blood, and I have every reason to think it is true. He says that, given according to the directions, it will take the place of beef scrap, ground bones, etc. Now, I am greatly in favor, especially here in the North, of bones and scrap from the butcher's, to be ground up; but in Florida the greater part of the scraps for chickens smells badly; and even if it is given to the fowls as speedily as possible after being ground, I very much dislike to use it. Of course, you can purchase beef scrap; but the poultry-journals are now all cautioning against moldy or musty beef scrap. A year ago a very successful young poultry-keeper in our town all at once had trouble from his chickens dying. I went down to his place, and saw little white Leghorns, fully feathered out, scattered all about dead in his lot and yards. He let them loose in the fields, but it did not make much difference. At the time, no one could even suggest what the trouble was. This spring he informed me it was probably caused by the poor quality of *beef scrap* he had used. When he stopped feeding the beef scrap, there were no more dead chickens. Now, if dried blood is a safe substitute for animal food I think it may be a pretty good thing; but even if all our good friend Snively tells us is true, are there not circumstances where it is advisable to use an egg-stimulant?

Just before I left Florida I had an offer of 15 cents a pound for all my old hens. Now, if you decide to dispose of a lot of laying hens, to be sold to the butcher, is there any objection to giving them a tonic so as to get as many eggs as possible before they go to the market?

I suppose the readers of GLEANINGS know how heartily I am in accord with every movement to discourage the use of drugs, and, I might almost say, medicine of any sort, either for mankind or domestic animals. Right in this connection I take great pleasure in submitting to your attention a 1911 bulletin from the North Carolina Department of Agriculture, entitled "Condimental Feeds, Stock and Poultry Tonics, and Conditioners." This bulletin gives us the result of a large list of experiments with all kinds of farm stock, including chickens, and they make two very important points. The first is that, even granting that these medicines are a *benefit* to domestic animals, the prices charged for such drugs are extravagant and even outrageous. You may remember what I said about paying 50 cents for a little box of salve that should not have cost over a nickel. Secondly, after careful experiments with almost every tonic and condition powder on the market they de-

cided that the gain or improvement is so slight that the small quantity of medicine given can hardly have had any thing to do with the improvement. As I said at the outset, the mash in which the medicine is placed would of itself be a benefit to the stock. This North Carolina experiment station has gone to the expense of analyzing almost every medicine in the market. They give a list of the drugs generally used. For instance, if they are right about it, Conkey's egg- tonic, of which we have been speaking, is composed mainly of dried blood and linseed meal, and the drugs added are fenugreek, charcoal, glauber salts, and sulphur. Now, there is something in the above that puzzles me. There is no mention of Cayenne pepper, mustard, nor any of these pungent substances. Fenugreek I do not know much about; but I hardly think that this is what made me sneeze when feeding it to my chickens. Is it possible that they have made a mistake in their analysis?

There are several sides to this question. In some reports I saw recently, two lots of fowls were fed just alike, with the exception that one had plenty of strong pungent mustard put in their mash. They gave the poultry all they seemed to want. Well, this pen that had the mash not only made a much larger output of eggs, but the eggs were more *strongly fertile* than the other. We all know that poultry have a great liking for mustard, pepper, and all such pungent vegetables. Down in Florida they have two varieties of mustard, used especially for greens—the Chinese and the Florida mustard. These mustards put out great leaves as big as rhubarb, or even bigger, and it grows as high as one's head. I sowed some seed; but when even the little chicks got a taste of that mustard they *would* get through the poultry-netting, and I hardly succeeded in getting a plant to grow to maturity. Pepper-grass, young peppers, and every thing along that line, seem to be eagerly appropriated by the chickens, little and big, and I am sure it is good for them.

Before I close, let me mention that this bulletin I have mentioned advises farmers and everybody else to go to their druggist and get whatever medicine is wanted—that is, if they are *sure* they need it, instead of paying ten times or sometimes almost a *hundred* times the real value of the stuff for the much-lauded stock-foods. I have for some time been strongly impressed that the condition powders so vehemently advertised are but little short of a swindle because of the efforts the vendors make in giving premiums, etc., to get people to try them. Please keep in mind that you may be swindled, even if you are promised "your money back if not satisfied." When you get the wonderful new thing you straightway give more careful attention to your cattle, sheep, hogs, and poultry, and, as a natural consequence, they show improvement. In the opening letter, brother Snively suggests that these things are stimulants, something like tea, coffee, tobacco, and strong drink.

When you once get into the habit of using them you will, as a matter of course, suffer when you try to let them alone; and I for one declare against any article of food or drink that I can not cut off at once without suffering.

INDIAN RUNNER DUCKS, BY A MAN WHO HAS KEPT THEM FOR TWELVE YEARS.

We have had Indian Runner ducks twelve years or longer, and think we have learned some of their habits and good qualities. They are great layers, and we have had some that laid every month in the year; but they will not always do this, and I think some breeders mislead their patrons by claiming too much for their favorite breed. The simple truth is good enough.

As to eating qualities, they compare very favorably with other ducks, but are smaller when grown, but mature earlier. We have had ducks lay when five months old, but not always; and while we have raised hundreds of Indian Runner ducks we have had but two to sit and hatch, and about six that wanted to sit. They are non-sitters, but will *sometimes* break the rule. We have never had old ducks or drakes that showed any inclination to abuse or kill ducklings, and we never try to keep them separate. We keep ducklings from going into the water till they are feathered. They are more sensitive to a cold rain than little chicks. In a very warm climate it might be different. It is not possible to distinguish sex till they are several months old. The young ducks have a coarse "quack" when handled, while the drakes have a mellow liquid voice. The curled feathers above the drake's tail come later. We keep our old ducks in the "corral" at night, and till 9 or 10 A.M., to get their eggs, as they lay in the morning; and if they are out in the fields the crows get their eggs. They are great foragers, and a pond is better for them than a stream or river, as then they are not so likely to stray away. Your experience as to their being easy to raise, especially in sunny Florida, agrees with ours (out here in sunny Kansas). We usually set 15 eggs under a Barred Rock hen, and they hatch well. Thirteen is enough under a small hen in cold weather. The beaks of ducklings are yellow, but turn to a dark green when they get older; a few, however, may retain the yellow color.

The most amusing use I ever made of my ducks was to catch grasshoppers—not the Kansas grasshoppers you read about, but the same as you have in Ohio. Our alfalfa sown in late summer is frequently injured around the borders of the field by the hoppers coming from other crops and eating the young alfalfa. I just took the ducks out in the morning as you would a flock of sheep, and started them at one corner, and herded them around the field. After the first few mornings it was an easy job, and it was fun to see them catch the pests. They saved the alfalfa.

Meriden, Kan.

O. C. SECHRIST.

Many thanks, friend S. From the above it would really appear that it is quite unusual for an Indian Runner duck to waste any time in sitting. I believe this is a big point where they are kept for eggs alone. The sitting can be easily managed with our large breeds of sitting hens or with an incubator. In regard to testing the sex, I suppose we shall have to give it up until they are pretty well grown.

In regard to belligerent males, it would seem as if my strain was peculiar in that respect; or perhaps they happened to learn the trick by chasing the chickens. When I left Florida my two drakes and two ducks were turned over to neighbor Abbott, as you may remember. Here is what he has to say in regard to them:

Mr. A. I. Root:—I shipped the drake as you directed. I sent the one with the dark head. He was $\frac{1}{2}$ lb. the heaviest; but do you know I was glad to get rid of him? I think they are the "king of fowls" the same as the lion is the "king of beasts."

They chewed off the head of a 2-lb. chick one day. I began to wonder if they might not both take it into their heads to take me down some day when they got pretty hungry for meat. We have 14 little fellows from the eggs I got of you. I weighed one tonight—9 oz., *two weeks old*. Things are all moving along in the same old groove, except that we are now getting nice rains every day.

The ducks have laid 45 eggs. They have been having a rest, but are now starting again.

Bradentown, Fla., May 19. D. W. ABBOTT.

The above indicates that ducks and chickens should be in separate yards unless they have a very broad range, say an ordinary farm; and while it is a little unfortunate to have a drake that will kill chickens, is it not true that the most valuable males among all our domestic animals are the ones that are at times ferocious? Please notice the above report of a duckling weighing 9 ounces (a little over half a pound) when just two weeks old. Is there any thing in the whole round of domestic fowls that will equal the above? As this is an interesting matter I give here a clipping from the *Farm News*.

Some years ago, A. J. Hallock, of Long Island, one of the most extensive duck-growers in the country, kept a record of the growth in weight of ducklings from shell to market. He found the following averages: Half out the shell, 2½ oz.; all out the shell, 2½ oz.; one week old, 3 oz.; two weeks old, 5½ oz.; three weeks old, 7½ oz.; four weeks old, 1 lb. 3 oz.; five weeks old, 2 lbs. 6 oz.; six weeks old, 3 lbs. 12 oz.; seven weeks old, 4 lbs. 12 oz.; eight weeks old, 6 lbs. 2 oz.; nine weeks old, 7 lbs. 4 oz.; ten weeks old, 8 lbs.; eleven weeks old, 9 lbs. 3 oz.

Please notice in the above clipping that the 1 lb. 3 oz., at the age of three weeks, was exactly doubled in a week more. Possibly the above is a misprint. I do know this, however, that I once had an Indian Runner duckling, when he was very small (weighing only a few ounces), that actually *trebled* his weight in just seven days. Where every thing is favorable, and the ducks are strong and healthy, their growth certainly is at times almost incredible.

One thing more: My two ducks were carried over to neighbor Abbott's, just after one of them had made the hundred-egg feat in 100 days. Well, after being moved two miles, and put in a yard, in just 30 days more the two ducks had laid 45 eggs. We will try to keep tab and see how long this wonderful egg-laying will continue.

As you may like to know how the belligerent drake stood his long trip from Bradentown to West Palm Beach, Fla., I append a report from his owner.

Mr. A. I. Root:—The drake came to hand all right, and he is a fine bird. Thanks for him.
West Palm Beach, Fla., May 17. J. N. PARKER.

"MARCHING ON."

The St. Louis (twice a week) *Republic* comes out with a proclamation, in big type right under the heading, clear across the page, as follows:

NO WHISKEY ADVERTISING WILL BE PRINTED IN THIS PAPER AFTER THIS ISSUE.

May God be praised, not only for this but that many other great periodicals, one after another, are coming out of darkness and into the light of an awakened conscience where *principle* counts more than ("dirty") dollars.